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DIESEL RAILWAY TRACTION

The January issue of this RAILWAY GAZETTE publication, illustrating and describing developments in Diesel Railway Traction, will be ready on January 2, price 2s.

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THE RAILWAY GAZETTE

33, TOTHILL STREET, WESTMINSTER, S.W.1

The Second Year of Nationalised Transport

THE year now closing is the second since the major internal British transport systems were brought under State control by the Transport Act, 1947. It has seen the publication of the first report—that in respect of 1948—of the British Transport Commission, the establishment of yet another Executive—that dealing with road passenger transport—and the first step towards the establishment of a new system of charges for British internal transport as a whole. From the financial point of view there is no doubt that 1949 will prove to have been even less satisfactory than the preceding year, when the deficit was £4.7 million. Current expectations are for a loss which may well exceed £20 million for 1949. The difficulties under which the railways have operated have not lessened materially during the past twelve months, but nevertheless there have been improvements in train services, and an extension of cheap passenger fare facilities. No doubt the latter would have been greater but for the impossibility of providing the necessary coaching stock and so forth which would have been entailed. It cannot be judged a satisfactory year, or one in which very marked progress has been made towards the objectives of the 1947 Act. Fulfilment of the aims of that measure, however, necessarily must be a matter of long-term policy.

Mr. A. H. Peppercorn

Elsewhere in this issue we publish a portrait and biography of Mr. A. H. Peppercorn, O.B.E., Chief Mechanical Engineer of the Eastern & North Eastern Regions of British Railways, who retires tomorrow (December 31). He was previously Chief Mechanical Engineer of the L.N.E.R. Mr. Peppercorn joined the Great Northern Railway in 1905 at Doncaster, and served his apprenticeship first under Mr. H. A. Ivatt, and afterwards under Sir Nigel Gresley. In 1941 Mr. Peppercorn was appointed to the dual post of Assistant Chief Mechanical Engineer of the L.N.E.R. and Mechanical Engineer, Doncaster. Four years later he relinquished the latter post to give closer assistance to Mr. Edward Thompson, who had succeeded Sir Nigel Gresley as Chief Mechanical Engineer in 1941, and to take charge of the department in Mr. Thompson's temporary absence. Mr. Peppercorn was himself appointed Chief Mechanical Engineer in 1946, and has continued in that post for the Eastern & North Eastern Regions since nationalisation. He visited the United States towards the end of 1945 to study railway practice and production methods there. During his period at Doncaster he has been closely associated with the design of the "A1" and "A2" class Pacific locomotives, as well as of the "K1" class 2-6-0s.

Economic Situation and Dividend Policy

Recent consultations between the Association of British Chambers of Commerce, the F.B.I., and the National Union of Manufacturers, have resulted in these organisations writing to their members suggesting points to be borne in mind when deciding a policy on the distribution of profits. Attention is called also to the need for a drastic reduction in Government spending, allowing an appreciable reduction in taxation which would enable resources to be concentrated on producing more goods at lower cost; relief of taxation on sums put to reserve; and to the importance of the contribution by industry itself in curbing inflation. Maximum production would not be reached unless a man had some hope of retaining what he felt was a reasonable reward for risks successfully undertaken and harder work and longer hours. The point is stressed that, when times are normal, increased profits resulting from increased turnover and efficient management should be reflected in increased dividends, but that any premature departure from the practice of restraint in distributing profits would prejudice the results achieved in the past 18 months.

T.U.C. Post-Devaluation Wages Policy

The T.U.C. General Council has now issued its full report on wages policy modified in the light of devaluation. The report is largely an amplification of previous T.U.C. recommendations to which we referred in a recent issue; it recom-

mends wage restraints (provided that the cost of living does not rise sharply) to withstand inflation, but provides for revision of this freezing policy, should the economic situation permit, by means of close liaison between the T.U.C. and the Government. Prices and profits, however, must be restricted voluntarily. The conference of T.U.C. executives convened for January 12 to discuss wages policy is expected to approve the report by a comfortable majority. A divergence of views, however, is certain. Some of the larger unions, such as the N.U.R. and the A.E.U., object to wage stabilisation. The T.U.C. attempt, moreover, to persuade unions with cost-of-living wage agreements to suspend them temporarily, has partly failed; an important element amongst the miners, for instance, is pressing for an increased cost-of-living bonus for workers on minimum rates. With a general election imminent potential critics of T.U.C. policy may find it politic to refrain from expressing their views.

Railways' High Costs

Professor Gilbert Walker, in a letter published in *The Times* of December 21 on the draft principles to be embodied in the British Transport Commission's charges schemes for merchandise, refers at some length to the increases in costs which have occurred on railways. He suggests that the application for an advance in railway rates which is to be heard by the Transport Tribunal shortly, if successful, may widen the disparity between railway rates and road charges. If it stimulates the diversion of traffic from rail to road it may force the Commission closer to the "horrid alternatives" of acquiescing in a substantial and recurrent loss on its whole enterprise, or protecting its railway interests by raising road charges and asking for limitations on "C" licencees. As there can be no serious reduction in railway working costs until either railway wage rates fall, or the numbers of employees diminish, and as there is little likelihood of the first, endeavours should be made to offset the rise in wages by saving labour wherever possible.

Mechanical Handling Methods

One of the principal means by which labour costs can be offset on the railways is by the introduction of mechanical handling methods, and Professor Walker advocates this should be done on a "wholesale" scale. In fact, the railways are already taking steps to increase wherever possible the use of mechanical handling appliances, and a great deal of progress has been made in this direction. There is still scope for a wide extension of this principle, and there is no doubt that the Railway Executive is actively engaged in pursuing this form of economy wherever practicable. Professor Walker suggests that the Tribunal and the Commission should enquire forthwith into the efficiency and economy with which the railway labour force is employed. The Tribunal, as was stated in last week's issue, is to undertake a comprehensive hearing of both railways and traders when the application for higher charges comes before it. The British Transport Commission can hardly be expected to set up an inquiry which might suggest lack of confidence in one of its own Executives. The efficiency of the Commission, in fact, is no more than the sum of that of its Executives. The application for higher charges is not being made by the Railway Executive, but by the British Transport Commission.

Institute of Transport Annual Meeting

In the course of his speech at the recent annual general meeting of the Institute of Transport, the President, Brigadier-General Sir Osborne Mance, said there had been noteworthy developments during the past year. It had been a tonic to be able to resume the annual dinner, the congress, and the luncheons. He thought, however, that although the congress had been very successful, the number attending might have been higher. Local section development had continued well, and graduate and student societies were multiplying in number, which was one of the best omens for the Institute's future. Total membership figures were satisfactory, and showed the Institute to be in a strong position. Among the activities recorded in the report of the council for the year ended

September 30, 1949, which was presented at the meeting, was that once again officers and members of the council had had the opportunity of meeting the editors or representatives of some twenty of the leading publications directly interested in transport, and of expressing the council's thanks to the transport press for the help the Institute had received from it throughout the year.

A Canadian Railway Enterprise

A railway extension of universal interest is at present under construction in Western Canada. It is the biggest project of its kind that has been undertaken in Canada, and, indeed, in North America, for some time. In 1912, the Pacific Great Eastern Railway was incorporated to build a railway running almost due north and south from Squamish, on Vancouver Harbour, to Prince George, on the then Grand Trunk Pacific (later Canadian National) line from Red Pass Junction, on the main Vancouver line, to Prince Rupert, on the Pacific. The distance from Squamish to Prince George was 428 miles, but the mountainous country gave such engineering difficulty to the builders that by 1921 available funds were exhausted when the line had reached no farther than Quesnel, 347 miles from Squamish. The remaining earthworks had been largely completed, however, and are now being put in order over the 81 miles from Quesnel to Prince George, which it is hoped to open for traffic in 1951, while work is also in progress in rehabilitating the existing line. Diesel-electric locomotives have already been brought into use on the P.G.E.R., and it is intended ultimately to use nothing but diesel power. The railway is now the property of the British Columbian Government, and the future aim of the administration is to extend it 270 miles farther northward from Prince George to Dawson Creek and Fort St. John.

Packing Goods for Conveyance by Rail

In a paper on "Railway Claims and Packaging" at the December meeting of the Institute of Packaging, Northern Branch, Mr. J. Fletcher, Chief Claims Clerk, London Midland and Western Regions, Manchester, said that the high standard of packaging attained in recent years had contributed largely to the relatively lower compensation paid for breakage, chafage, and partial loss. The London Midland Region dealt with about 59,000,000 consignments by goods train and about 55,500,000 parcels by passenger train in 1948, when the number of claims paid was 0.38 per cent. for goods train conveyance and 0.03 per cent. for parcels. A Central Packing Organisation had been set up to obtain technical advice and authorise the certification of cases made of fibreboard for specific commodities, limiting capacity to a maximum weight of the commodity for which they were used. A first necessity in packing was to provide against human failure and, as it was natural to use the easiest means of lifting, packages should be of dimensions that would facilitate handling. Two small packages were better than a large cumbersome one, and suitable grips should be provided. When goods were dealt with in private sidings, it should be remembered that the movement of wagons was chiefly an end-to-end motion and consequently loading should be at an even level throughout.

The Cost of the Hot Box

At a meeting of the New York Railroad Club in October last, attention was concentrated on the cost to the railways of overheated journals, more especially on wagons, which in the U.S.A. are of the heavy 40-ft. and 50-ft. bogie type. Mr. P. M. Shoemaker, Vice-President of the Delaware, Lackawanna & Western, stated that in 1947 American railways reported 509 broken axles caused by hot journals, 421 of which caused derailments costing in all \$1,618,000. In 1948, 481 hot journals and broken axles caused 411 derailments, and the cost rose to \$2,233,000. On the Lackawanna, in the 12 months ending October 1, 1949, there were 1,904 hot boxes reported, each costing on the average just over \$50, but, worse, each causing an average delay of 40 min., which entails serious loss of availability when expensive diesel power is in use. Another speaker remarked that in the first six months of 1949, on Class I railways in the U.S.A., 67,006 wagons were set out of trains because of hot boxes, and many others might have

been in similar condition had they not already been set out in marshalling yards before beginning their journeys. Up to 85 per cent. of the wagons so held up are loaded, with the result that in addition to the idle time of the wagon, the consignment it contains may be delayed for two or three days. One speaker suggested roller bearings as the solution, but it is a question whether this remedy might not prove more costly than the disease.

Main-Line Railway Companies Dissolved

THE Great Western Railway Company, the London Passenger Transport Board, the London & North Eastern Railway Company, and the London Midland & Scottish Railway Company, have all ceased to exist. The dissolution of the Southern Railway Company was recorded in our June 17 issue, and last Friday *The London Gazette* carried a notice by the Board of Trade that the other main-line railway companies, and the L.P.T.B., among a list of bodies the undertakings of which have passed to the British Transport Commission, had satisfied Section 24 of the Transport Act, 1947—that is, had proved that their property had been transferred to the British Transport Commission, and all moneys had been properly distributed, and that they had entered into no agreement which the Commission might have cause to disclaim.

The passing of the Great Western Railway Company brings to an end an epoch unparalleled in British railway history. Alone of the four main-line railways which passed to the British Transport Commission on January 1, 1948, the G.W.R. had maintained its name and unbroken traditions since the Great Western Railway Company was incorporated on August 31, 1835. Throughout the changes which occurred in succeeding years, even when large-scale grouping was brought about in 1923 by the Railways Act, 1921, the Great Western retained its name and identity. With such deep-rooted traditions, and so long an unbroken history, the Great Western developed strong loyalties which have been barely scratched by the impact of nationalisation. These are unlikely to be affected merely by the dissolution of the statutory company.

The other main-line railway companies date only from the grouping imposed by the Act of 1921, and the London Passenger Transport Board had been in existence only since 1933.

British Railways Achievements and Objectives

A SENSE of ownership whether a source of pride or irritation, probably has turned toward the railways the thoughts of many who have not considered railways with much attention since their schooldays. A new illustrated publication* issued by the Railway Executive is designed as a source of authentic information on the organisation and activities of British Railways for traders, authors, journalists, lecturers, and others among the new proprietors who welcome the facts behind a subject still likely to become controversial from time to time. For example, when the question of railway charges and their effect on the national economy is discussed, it is useful to know to what extent the cost of the major commodities used by the railways has increased. In most cases, this has been by more than 100 per cent., an experience only too familiar to those to whom the book is addressed. There is an echo of this in the fact that, in 1948, there were slight decreases in all classes of journeys, except those at excursion, weekend, cheap day, and other reduced fares, which increased by just over 145 per cent. There is no easy optimism over what the railways can do to save money as a result of the new set-up, but it is recalled that numbers of staff were reduced between July 10, 1948, and March 26, 1949, by 27,800, largely as a result of some replacements of normal wastage not being necessary under unified organisation.

From a frank review of problems, the book passes to railway facilities, and in this section many readers are likely to find information both new and useful. Railway commercial representatives always have made strenuous and

successful efforts to keep sections of the public informed of travel opportunities and special transport services, but necessarily they leave untouched many individuals who make only the narrowest use of what the railways have to offer. Every method of spreading such knowledge is important today, and the book should prove a valuable medium in this respect. There is some adroit argument to show that the Transport Act, of 1947, was part of a natural process of evolution dating from the first great expansion of main-line railways in early Victorian days, described as "simply a gigantic business proposition." The aim of the promoters was to "further commerce" and to "get rich themselves," but the result was that we acquired a large railway network at a time when no British Government would have dared to risk a programme of State construction. This timidity being overcome at a later date, notably as seen in Government assistance for railway building in West Scotland, our legislators then felt they had served the necessary apprenticeship for taking over the British railway system *en bloc* on January 1, 1948. One hopes that in evolving thus the railways retain some of the spirit of the days when they were a "gigantic business proposition"; and that in looking back at the promoters who wished to "get rich themselves," they recall Dr. Johnson's dictum that a man is never so innocently employed as when he is making money.

We have dealt at some length with these species of apologia because political feelings must play a great part in a nationalised industry's relations with the public, a section of which will pounce eagerly on special pleading. This publication holds the balance fairly enough, but surely it would have been fairer to say that most of the "cheaper-than-ordinary" travel facilities have been restored, rather than introduced, since January 1, 1948. There is a commendable absence of "pie in the sky" in the chapter "Utility is Not Enough," and the formidable nature of the development programmes necessary for making realities of "standardisation" and "unification" is fully acknowledged.

The book is well illustrated and the presentation has been carefully studied, but it seems a pity that, presumably in the interests of display, the captions are grouped on the inside back cover instead of appearing with pictures so well calculated to excite interest. A collective review of our railway system such as this is not, of course, a novelty made possible by nationalisation, for a mass of information assembling data from all the main-line companies used to be presented in "Facts About British Railways," issued by the pre-nationalisation British Railways Press Office. The present publication, however, is probably better calculated to appeal to the general reader than the earlier booklet, useful as that was as a source of reference.

Changed Emphasis in Railway Advertising

FOR many years the railways have been among the largest advertisers in the country, and have used a wide variety of media for their announcements. The daily and periodical press, technical, trade, and popular, and posters, have been among the principal means of reaching the public and of promoting the movement by rail of both passengers and goods. Possibly because of the very wideness of the appeal which the railways have to make, in a great many cases there has been a tendency on the part of railway advertising to be very broadly based, and to a large extent to be of a "prestige" character. There have, of course, been many instances in which general railway policy has been enunciated through advertisements. One example of this was the wartime "Is your journey really necessary?" appeal. Informative advertising, such as the announcements relating to excursion trains or cheap travel facilities, have also played a considerable part in railway advertising.

A great number of railway posters has made its appeal on scenic considerations, and many well-known artists have been retained from time to time to carry out commissions for railway posters. Not all of these have confined their efforts to purely artistic representation of the scenic attractions of territories served by the lines, but have courted popular appeal by their skill in presenting a picture which was both humorous and attractive to the potential holidaymaker.

* "British Railways Today and Tomorrow." The Railway Executive, 222, Marylebone Road, London, N.W.1.

Recently there appears to have been a change in the policy behind railway announcements. Advertisements currently appearing in the press tend to stress a more direct approach to the selling of transport. On page 776 are reproduced two advertisements of this kind. In one a direct appeal is made to builders to send their goods by rail, and in another an approach is made to traders by emphasising the reason why many food producers prefer rail transport.

The change in policy behind these advertisements would seem to be in direct relation to the need of the railways to secure the maximum amount of traffic, and to bring as forcibly as possible before traders the facilities which they can offer. The announcements now being published are both practical and realistic and are calculated to make a direct appeal to the trading community. Several posters have also been issued advertising freight services. These bear the slogan, "British Railways goods service is a good service," and they show in various ways the manner in which containers can assist traders. Other posters, of which examples have been reproduced recently in our pages, stress the practical, rather than the purely scenic, aspect of railway operations.

Undoubtedly there will be many who will regret that the railway advertising policy is becoming more concentrated on the prosaic practical announcement and poster, as opposed to the very attractive scenic posters which have for so many years been a feature of stations and hoardings. Nevertheless, there are sound reasons in present circumstances why the available resources of the railways should be concentrated on announcements of direct appeal. The financial position of British Railways is such that no effort should be spared to promote traffic, and there can be little doubt that the new advertisements are better calculated to achieve this end than the more picturesque posters whose appeal was too often more æsthetic than commercial.

* * * *

Commercial Train Services—London and Birmingham

THE 2-hr. trains between London and Birmingham, which commenced to run from Euston in March, 1905, and from Paddington in July, 1910, constituted one of the best-known commercial services on this side of the Atlantic, and were frequently quoted in pre-war days as a model of punctuality and speed, for the 56.5 m.p.h. non-stop average of the Euston service was quite a creditable performance in 1905. These 2-hr. trains from Euston, entrusted at their commencement to Mr. Whale's 4-4-0 "Precursor" engines, had been preceded in June, 1902, by some non-stops in each direction in 2 hr. 5 min., and one up train, at 5 p.m. from Birmingham, had been booked to Euston on a 2-hr. schedule from October, 1902, but the Webb four-cylinder compounds, which were used in 1902, were not very reliable, and required assistance with anything over the normal 7-vehicle formation (about 210 tons) if time was to be kept, so that we may take 1905 as the commencing date of the express service. All the Euston 2-hr. trains were originally non-stop, and remained so before and after the first world war (during which a "minimum time" of 2½ hr. between London and Birmingham was observed on both routes) until October, 1921, when one up express (6.20 p.m. from Birmingham New Street) was given a pick-up stop at Coventry in the 2-hr. schedule. The up road, on both routes, is rather easier than the down, and the 6.20 p.m. was timed, in October, 1921, over the almost 19 miles from Birmingham to Coventry in 19 min., with a load limit of only 200 tons unassisted, and then allowed 99 min. for the easy 94 miles from Coventry to Euston.

A service of semi-fast trains, usually routed *via* Northampton, provided the Euston and Coventry communication in early days, and, before 1914, the 2-hr. non-stops were treated with exceptional consideration, although they could, when hauled by a "Precursor" easily recover about 8 min. delay without excessive speed. A 10-min. clearance ahead of them was rigidly maintained in the timetable, and the trouble taken over their working was well repaid by the rapid growth of the London and Birmingham traffic. All the 2-hr. trains from and to Euston were run solely to serve the Birmingham, Walsall, and Wolverhampton areas, and were consequently

not tied to any service to the North, though at one time the London and North Western ran a portion of the 4.45 p.m. 2-hr. train from Euston through to Shrewsbury, *via* Wolverhampton and Stafford. Many of the Great Western expresses, after 1910, were through trains to Shrewsbury, Chester, and Birkenhead, which tended to complicate their marshalling, and was bound to have some effect on punctuality in the up direction.

No actual acceleration of the Euston trains took place until October, 1935, when the L.M.S.R. cut the schedule down to 1 hr. 55 min. in each direction, but by this date none of the trains was non-stop, stops at Coventry being almost universal, so that the locomotive work was very much harder than in 1905. The 4.50 p.m. 2-hr. train from Birmingham had been calling at Willesden from February, 1922, and was given a second stop, at Coventry, in April, 1932, when it provided the first genuine 60-m.p.h. booking on the Western Division of the L.M.S.R. (88½ miles from Coventry to Willesden in 87 min.), and in the autumn of 1935 the 6.20 p.m. from Birmingham was making three stops, at Coventry, Rugby, and Watford, on a 2-hr. schedule, and was booked to run the 65 miles from Rugby to Watford in one hour. Among other landmarks in the Euston service should be mentioned the introduction of typewriting facilities in the 4.45 from Euston in May, 1910, and the through service between Broad Street and Birmingham, commenced in February, 1910. These trains left Broad Street at 5.25 p.m. and Birmingham at 8.20 a.m., and took 2½ hr. on the journey with stops at Willesden (in the down direction only) and Coventry. The down train was withdrawn in July, 1914, and a new 5.50 p.m. 2-hr. train from Euston substituted, but the 8.20 a.m. from Birmingham ran to Broad Street till the end of 1914.

A curious minor point about the original 2-hr. trains was their use, in 1905, to provide a service from Euston to Leamington competitive with the Great Western route. A slip-carriage was detached from two Birmingham trains (originally the 11.50 p.m. and 4.45 p.m. from Euston) on the through road at Rugby, and worked forward to Leamington and Warwick, giving an arrival at the former in 112 min. from Euston. No comparable service was possible on the up journey without new mileage, but one up semi-fast, at 9.15 a.m. from New Street, was for many years routed from Berkswell *via* Kenilworth, Warwick, and Leamington, and gave a time of 1 hr. 50 min. from Leamington to Euston. The best Great Western times between Paddington and Leamington in the 1905 summer were 113 min. down and 110 min. up.

The Great Western, before 1910, had been running a few non-stop trains from Paddington to Birmingham Snow Hill over its 129½ miles route *via* Reading and Oxford in 140 min., and had one up train, which called at Leamington and Ealing, in 142 min., but most of its North trains made two or three stops between Paddington and Birmingham and carried only a very small proportion of the London and Birmingham business traffic. The new Ashendon and Aynho line, *via* Biester, opened in July, 1910, was a hard road as regards gradients and service slacks, and the 2-hr. schedule over the 110½ miles (always, probably, the hardest regular booking on the Great Western) became very difficult indeed when loads increased in the 1920s and 1930s. The growth of traffic by the Great Western route in the early years after 1910 was retarded by the very inferior stock used in the expresses before the 1914 war, and punctuality suffered, after the rebuilding of Snow Hill Station was completed, from the slacks entailed by widening works right into the 1930s.

When the Great Western's 2-hr. service commenced in July, 1910, some of the up trains called at Leamington, though down 2-hr. trains were at first non-stops, and carried a number of "slips"; in 1912, five down trains had a total of ten slip-carriages from London, two had three slips apiece, and one up express created what was probably a slipping "record" by detaching slips at two consecutive stations. But Leamington stops gradually became the rule in both directions, and before 1939 the locomotive department was pressing for more time to be allowed. No attempt, of course, was made to bring the schedule down to 1 hr. 55 min. to meet the L.M.S.R. acceleration in 1935, and the 11.10 a.m. and 4.10 p.m. from Paddington had been altered in the autumn of 1933 to leave at 11.5 and 4.5, though the heavier 2.10 p.m. and 6.10 p.m. departures retained the 2-hr. schedule.

Efforts had been made in the early years to attract Continental traffic from the Midlands by working through trains or portions (the latter detached from the Paddington train at Greenford) into Victoria S.E.C.R., but the experiment was not very popular, and the history of the Great Western's service, from 1910 to 1939, has no other feature of special interest. It was probably at its peak in 1912, when there were seven down 2-hr. trains from Paddington at 9.10 and 11.5 a.m., 1, 2.35, 4, 6.5 and 8 p.m. (this, of course, was long before the standardisation of departure times at 10 min. past the hour), with five up services from Snow Hill in 2 hr., and four others over the Bicester route with slightly longer journey-times.

The 1939 timetables set out on this page hardly show either service at its best, for in May, 1924, the mid-day down expresses by both routes (12.50 p.m. from Paddington and 1.15 p.m. from Euston) were suddenly discontinued, leaving a gap in the service from 11.30 a.m. to 2.10 p.m. and these trains were never restored. The Great Western, which had offered in 1910 a "Mondays only" express at 8.40 a.m. with a stop at Ealing Broadway (a valuable commercial service, and calculated to divert some traffic which had hitherto used Willesden) had nothing earlier than 9.10 a.m. (11.10 into Birmingham), which made an outer-suburban pick-up stop at High Wycombe and slipped at Banbury and Leamington Spa. The early morning communication from London to Birmingham had always been the weakest point in the pre-war service, for Euston's 8.10 a.m. (a 2-hr. train calling at Watford and Coventry) only dated from July, 1938, though as far back as 1908 there had been a 2½-hr. train at 8 a.m. from Euston, which called at Watford, Rugby, Coventry, and Hampton-in-Arden; and from May, 1909, until the first world war, an 8.40 a.m. from Euston, calling at Willesden and slipping at Coventry, due at New Street at 10.45, had been the earliest down express. With these minor exceptions, however, the 1939 timetable may be said to have met all reasonable commercial needs, though better co-operation between Euston and Paddington might have given a more evenly-spaced service. On both routes, down 2-hr. trains ran as late as 7 p.m., and in the up direction, by accident or design, departures from Birmingham were so spaced that there was no interval longer than 1 hr. 35 min. without an express from New Street or Snow Hill, although the L.M.S.R. times were never standardised, as the Great Western's were since 1924.

Wartime decelerations have affected the London and Birmingham expresses very seriously. An extra 20 min. on what used to be a 2-hr. run is an increase of nearly 17 per cent. in travelling time, and operates rather harshly where a double journey is made in the day. Actually, the worsening of the expresses averages 30 min. down and 22 min. up on the Euston route, and 31 min. down and 25 min. up from and to Paddington, but the L.M.R. times are not really quite so bad as they appear in the timetable below, most of the trains being really booked to arrive about 5 min. earlier than

advertised (a pious endeavour to make arrivals look more punctual than they really are!) often with some time allowed for recovery of delays as well. Nevertheless, there has been a distinct transfer of business from Euston to Paddington, as the up trains from New Street, which must take turn south of Rugby among long-distance trains on a fairly crowded main-line, suffered (and still occasionally suffer) from late running of expresses from the North, which they are booked to follow very closely. This, however, may be only a temporary trouble.

The 1949 service presents some curious contrasts with that of 1939. On the Western Region route, a new business train has appeared at 5.10 p.m. from Paddington, and the 9.10 a.m. has had to be duplicated because of the weakening of the morning service from Euston. Unfortunately, the duplicate does not leave Paddington till 9 a.m., and the opportunity to give an early morning express has been lost. Had Paddington provided an express at 8.10, and Euston relieved their crowded 8.55 a.m. service by running it direct to Birmingham and provided a second train, via Northampton, to serve Coventry, matters would be much more satisfactory. In the up direction, we find a new 8 a.m. from Snow Hill to Paddington, and rather a glut of trains around 4 p.m. (at 3.55 and 4.45 from Snow Hill and 4.40 from New Street) though Euston no longer offers any good up service after the 5 p.m., which takes 2 hr. 50 min. and runs via Northampton, and there is consequently rather a crowding of the W.R. 6 p.m. departure. Euston re-instated its 6.20 from New Street in 1946, but withdrew it among the 1947 fuel-crisis cancellations, and a fast service of last summer at 7.50 p.m. from Snow Hill (balancing the 10.10 a.m. down from Paddington) was cut out on September 27, though the 3.55 p.m. from Snow Hill, which commenced to run last July as the balance of the 7.10 p.m. from Paddington, was retained. The L.M.R. route has also dropped the 11.45 a.m. from New Street of 1939, which, at 11.25, was one of the original 2-hr. trains of 1905.

The weaknesses of the present down service, apart from deceleration, lie in the lack of a fast service to reach Birmingham about 10 or 10.15 a.m., for the 7.5 a.m. from Paddington and 6.40 from Euston cannot count as commercial services, and of any departure from London between 11.25 a.m. and 2.10 p.m. It should be possible to bridge this gap, without new mileage, by re-arrangement of the 11.10, 11.25, 2.10, and 2.15 departures. In the up direction, the service is satisfactory till 10 a.m., but the 2-hr. gap which follows requires to be broken by a train at, or soon after, 11 a.m., in which case a later timing of the 12.40 p.m. from New Street would lessen the long interval before 2.30 p.m. Any such re-adjustment of departure times would, of course, be a joint matter for the London Midland and Western Regions, and in the case of the former, expresses from Birmingham should be given a path from Rugby preceding, rather than following, long-distance trains from the North.

LONDON AND BIRMINGHAM

1939

		a.m.	a.m.	a.m.	a.m.	p.m.	p.m.	p.m.	p.m.	p.m.	p.m.
Euston	dep.	6.50	8.10	9.15	11.30	2.25	4.35	5.50	6.55	—	9.35
Birmingham New Street	arr.	9.54	10.10	11.10	1.25	4.20	6.35	7.45	8.55	—	11.59
		a.m.	a.m.	a.m.	a.m.	p.m.	p.m.	p.m.	p.m.	p.m.	p.m.
Paddington	dep.	7.10	—	9.10	11.5	2.10	4.5	6.10	7.10	7.40	—
Birmingham Snow Hill	arr.	10.26	—	11.10	1.10	4.10	6.10	8.10	9.10	10.40	—
		a.m.	a.m.	a.m.	a.m.	p.m.	p.m.	p.m.	p.m.	p.m.	p.m.
Euston	dep.	6.40	—	8.55	11.25	2.15	4.30	5.35	6.55	—	9.35
Birmingham New Street	arr.	10.24	—	11.30	1.55	4.35	7.0	8.0	9.15	—	12.40
		a.m.	a.m.	a.m.	a.m.	p.m.	p.m.	p.m.	p.m.	p.m.	p.m.
Paddington	dep.	7.5	9.0	9.10	11.10	2.10	4.10	5.10	6.10	7.10	7.35
Birmingham Snow Hill	arr.	10.29	11.15	11.50	1.37	4.37	6.46	7.38	8.49	9.40	11.10

BIRMINGHAM AND LONDON

1939

		a.m.	a.m.	a.m.	a.m.	p.m.	p.m.	p.m.	p.m.	p.m.	p.m.
Birmingham New Street	dep.	7.30	—	8.40	10.15	11.45	1.0	2.35	—	4.50	6.20
Euston	arr.	9.55	—	10.40	12.30	1.40	2.55	4.30	—	6.50	8.20
		a.m.	a.m.	a.m.	a.m.	noon	—	p.m.	p.m.	p.m.	p.m.
Birmingham Snow Hill	dep.	7.45	—	9.0	10.0	12.0	—	3.0	3.55	—	6.0
Paddington	arr.	10.0	—	11.0	12.5	2.5	—	5.5	6.0	—	8.5
		a.m.	a.m.	a.m.	a.m.	p.m.	p.m.	p.m.	p.m.	p.m.	p.m.
Birmingham New Street	dep.	7.30	—	8.40	10.5	—	12.40	2.30	—	4.40	—
Euston	arr.	10.10	—	11.0	12.50	—	3.0	4.55	—	7.5	—
		a.m.	a.m.	a.m.	a.m.	noon	—	p.m.	p.m.	p.m.	p.m.
Birmingham Snow Hill	dep.	7.20	8.0	9.0	10.0	12.0	—	3.5	3.55	4.45	6.0
Paddington	arr.	10.5	10.15	11.20	12.25	2.35	—	5.40	6.25	7.5	8.40

LETTERS TO THE EDITOR

(The Editor is not responsible for the opinions of correspondents)

London and South Wales and Bristol Services

53, Westfield Road,
Surbiton, December 13

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—I would like to add a few observations to the survey of Western Region services in your issue of December 9.

The 9.5 a.m. from Paddington originated very early in the war as a relief to the 9.15 down, and like most relief trains has a not entirely satisfactory schedule. In my experience of this train (admittedly mainly confined to Monday mornings), I have yet to record a punctual arrival at Bristol, as the proximity of the heavily-loaded 8.55 down enforces very restrained running until beyond Swindon, if signal checks are to be avoided.

A return to the pre-war arrangement of 8.55 Bristol slip and 10.0 "Bristolian" services is not practicable, even if high-speed running were permitted, as the 8.55 is now fully loaded with South Wales traffic and the Bristol traffic has grown beyond the capacity of the short "Bristolian" rake.

The 9.5 should therefore be regarded as the principal down service, but be altered to leave at the "standard" time of 9.15, retaining its popular Reading stop, and with a 24-hr. schedule would reach Bristol no later than its actual arrival now. The 9.15 semi-fast could leave at 9.20 or even 9.18, as with its Ealing Broadway stop a shorter interval than normal is required.

Yours faithfully,
J. N. FAULKNER

A Remarkable Journey by the "South Yorkshireman"

12, Carteret Street,
Westminster, S.W.1, December 12

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—I am sure the British Transport Commission will be most grateful to you for your description of what occurred to the "South Yorkshireman" on the night of November 21, as a footnote to my letter in your December 9 issue.

I am not expert enough to argue about the re-routing, but I would like an answer to the questions which puzzled me, and apparently, from their conversations, quite a number of other passengers on the train. Why was there such an interminable delay not only in reaching a decision to re-route the train but at all the numerous wayside halts after such decision had been made? I cannot really believe that the traffic density in these rural districts could really have necessitated such delays. Again, why did it take an hour and a half at Brackley, and another hour at Haddenham to move the locomotive from one end of the train to the other? The impression most of us had was that nobody could have cared less as to what happened to the train or its passengers—an impression which I for one gain on most of my travels today on British Railways.

Yours faithfully,
ROGER W. SEWILL

London Transport Extravagance

London, N.W.2, December 10

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—The article on the London Transport Instruction Train in your issue of November 18 is most interesting, not only intrinsically, but also because it is an excellent example of the extravagance which has for years characterised the L.T.E., and its predecessor, the L.P.T.B.

One is entitled to expect a useful life of 35-40 years from rolling stock; it would appear that the 1919 cars in the instruction train had performed 30 years of service, before conversion. This impression is, however, false, for this rolling stock has been in store since early in the war, thus having had a service life of only just over 20 years. No wonder, indeed, that Northern General buses running in Newcastle carry above their windows such slogans as "A 2d. fare on this bus costs 4d. in Nationalised London." London has one of the highest urban fares in the country. One cannot economically have cheap fares, a prime requirement in local transport, and exclusively the most modern rolling stock. This does not necessarily mean discomfort: the late Mersey Railway is 46 years old, comfortable and in excellent condition.

A plea that 1919 cars could not run in service with other existing types may be true in some circumstances, but the rolling stock demands of the Northern City line, or the Woodford-Hainault shuttle service are comparatively small, and the services are self-contained. The use of these cars on such services would release stock urgently needed to relieve the sorely pressed main section of the Central Line. Instead, London's fares will have to bear the cost of 90-odd new cars for the Northern City line for just this purpose.

This extravagance extends to every detail, and two examples are appended. One of them also emphasises the ridiculous efforts to eradicate at any cost every vestige of the pre-nationalisation concerns—those little links with the past that the student of transport finds so interesting. (Unfortunately, the Railway Executive is also pursuing a similar policy of replacing serviceable signs, noticeboards, and so on, with "Regional" types.)

Some while ago, the Metropolitan Railway-type of bar-and-diamond station name boards at Moor Park were quite unnecessarily replaced by the standard L.T. type bar-and-circle, bearing the words:—

MOOR PARK &
SANDY LODGE

After their erection, a "revised" paper name bar was pasted over the new enamel one, worded:—

MOOR PARK
AND SANDY LODGE

One can only assume that the inhabitants of Sandy Lodge are firmly determined never to cede from those of Moor Park. This, surely, is a most arrant example of money spent to no useful purpose, albeit on a small matter, but one example of many.

A welcome reversion (unusual in itself) for London Transport to pre-1937 practice is the re-introduction of differentiation between the Metropolitan and District Lines on London Transport poster diagrams, the former again being shown mauve, and the latter green. Apparently in keeping with this, however, the green "Metropolitan Line" diagrams displayed in compartments are being replaced by similar diagrams in mauve, little different from the former, but omitting certain stations at which trains do not regularly call. Also interchange stations are shown "for . . . Region," rather than "for . . . Railway." Nevertheless, although the rolling stock concerned has not been used for years on the route, the Uxbridge line is shown in full on this map. A similar change is being made with the accompanying "Chilterns" map, which is almost impossible to read in any case. Once again we see money, labour, and material spent to no good purpose by a concern which is duty bound to serve the public economically.

Yours faithfully,
METRO-MAN

Railway Fares

Eynesbury,
St. Neots, November 28

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—In your November 25 issue, Mr. J. H. Laundy describes me as an indefatigable writer on the shortcomings, real or imaginary, of British railways. But if he could prove that there was anything "imaginary" about them, he would undoubtedly drop down on me like a ton of bricks!

There must be something radically wrong with British railway accountants' ideas on transport economics when they condone the running of excursions, at heavy additional expense, at half the ordinary fares. On a wet day, particularly, the whole of the receipts are probably swallowed up by the cost of advertising them in several newspapers only. Far better to reduce ordinary fares, and avoid all these unnecessary extra costs.

Mr. Laundy claims that if my suggestion were adopted to reduce ordinary fares to 1d. a mile single and 1½d. return (motor coach levels—when the railways would have the advantage of greater speed), it would be necessary to increase the number of passengers from 471,000,000 to 1,163,000,000. But will he tell us how many hundreds of millions of passengers now travel by road who formerly all travelled by railway? Before the original raising of fares in the 1914-18 war, road traffic—passengers and goods—was practically non-existent. They were all carried by railway to the nearest point for local distribution. The road haul, by bus, tram, or horse and cart, to final destination was very short.

It is extraordinary that Mr. Laundy should confess that he is not in a position to confirm or disprove my statement that our railway charges are upwards of 100 per cent. higher than abroad, and that he should contend that this has no bearing on the Commission's problem which is how to make transport in this country self-supporting.

On the contrary, it is precisely because of this lack of

knowledge of the improvements that have been made in other countries which, if they had been adopted in England, would have rescued our railways from their financial plight, and avoided depriving hundreds of thousands of shareholders of dividends for upwards of 20 years.

But, under this reign of accountants—who, of course, know little or nothing of the actual working of the lines and their traffics—no study has ever been made of the heavy economies attainable in many directions by modernising methods which, in some important respects, are 50 to 100 years behind the times. As an insignificant example of economies, the latest complaint is that the public is fleecing the railways of £1,000,000 by evading payment of fares. They do not know that in many countries—particularly America—all trains, including suburban, are now composed of complete corridor saloon and other coaches. After leaving a station, the guards walk through the train collecting tickets, instead of being stuck in a van (which is not used) at the rear of the train, isolated from their passengers. Evasion of payment of fares is almost impossible. Complete corridor trains also possess other important advantages over our old-fashioned compartment (including corridor) carriages.

Finally, because they can carry traffic in great bulk, railways are easily the cheapest form of land transport. Consequently, all that their administration needs is a few men with common sense and enterprise, to capture all the traffics.

Yours faithfully,

E. R. B. ROBERTS

The Debate on Transport

65, Hallowell Road,

Northwood, December 12

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR.—Will you kindly permit me to comment on the statement of the Minister of Transport on December 1 (reported in your December 9 issue) to the effect that the deterioration in the financial position of the railways in 1949 . . . was not due to inefficient management, and that almost any test that could be applied to the Railway Executive in particular proved that up to the hilt. Railway statistics for years have shown conclusively that in a technical operating sense the railways have been so inefficient that it is difficult to persuade people to accept the truth so plainly revealed. It is not a question of party politics, nor is it a question of comparison of one country with another. If Mr. Barnes is right in regarding British Railways as comparing favourably with other countries, I suggest the right way to express it would be to say that the railways in other countries are even less efficient than ours.

Railway wagons with full loads which take ten to twelve days to cover 300 miles, deliveries by railway road vehicles within the same town as the station which are delayed ten or twelve days and even up to six weeks, covered vans which leak so badly that they cannot safely be loaded, and wagons so dirty that they have to be rejected, are common occurrences. The Regional Officers in all Departments, in my personal experience, are keener than ever they were, and spare no effort to give efficient service, but they are struggling against methods of operating and equipment so obsolete in design and capacity that they are unable to do what they would like to do and would do if they were given even reasonable backing. The Minister defends the Railway Executive; where, then, does the management lie? Who is it that is responsible for the perpetuation of methods of operation which are unquestionably the key to general inefficiency?

There is no escape from the net ton-mile per engine hour statistic as the supreme measure of railway efficiency. Not a single person has ever challenged my repeated assertions that the steam locomotive running on rails is easily capable of a performance on the average yielding 15,000 net ton-miles per engine-hour. In 1948, the actual average figure was 542. The efficiency ratio (measured as in mechanics) was 3.6 per cent.

The reason for this is not that the traffic is not available, but that it is wrongly manipulated. Millions of pounds a year are spent in costly operations which require the use of wagons far too small as to weight-carrying as well as cubic capacity; require a greater expenditure of engine time in shunting and marshalling than is required for the true work of transport, the haulage of loads from place to place; make for the awful congestion of the goods stations; multiply the opportunities for damage and pilferage; and could be done far more economically by road.

The hope of meeting financial deficiencies by the arbitrary increase of rates and charges—a form of levy little different from discriminating taxation—has palsied the hands of railway officers for years. Carried to its logical conclusion, which is complete monopoly, this evil system would rob trade

and industry of the control of one of the most important items in their costs, and therefore in prices, namely, the cost of transport.

The answer that railway charges have not kept pace with other costs is merely escapist. Railway charges have always been high because they have been at inefficiency level. I am one of those who hoped that nationalisation would (as it could) result, within two years, in such a measure of increased operating efficiency as would have led to an all-round reduction of charges, as well as an increase of wages. The British Transport Commission could bring itself to regard an increase in net ton-miles per engine-hour from 450 in 1938 to 542 in 1948 as "a very favourable trend." If the measure of their gratification represents the tempo of their hopes, trade and industry will ere long be working, not for their own profit, but to keep the railways out of the "red." I am not the only one to be disillusioned.

Yours faithfully,

FREDERICK SMITH

Railway Standards

Station House, Forest Road,

Ilford, November 26

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR.—Mr. Burke, in your November 25 issue, overlooks the claims of those who have, as they have always had, a keen interest in railway operating, who were railway "rankers" before the war, joined military railway operating units, became officers with experience both during hostilities and with the Armies of Occupation, and returned to the railway service as "rankers." There they remain, and will always remain, if the suggestion is accepted that senior positions in the service should be allocated to "keen" young men with no experience of railway work other than two years abroad with the Transportation Branch.

To paraphrase Mr. Burke, there should be far more openings than there are in British Railways for "rankers" with their heart and soul in railways so that by this incentive more may be useful railwaymen instead of frustrated "lower orders."

What senior appointment could be satisfactorily filled by Mr. Burke's nominee for which an equally suitable applicant with railway experience could not be found? No objection would arise to keen young men starting in the basic grades and working their way up, but this apparently is not to be contemplated, as the people in question want to start at the top of the tree, thus preventing promotion in all lower grades.

Surely Canadian railways are not run on the basis that experience is of no value?

Yours faithfully,

V. ARCHER

Bournemouth and Weymouth Services

"Abingdon," Woodside Grange Road,

North Finchley, N.12, December 8

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR.—The editorial note in your December 2 issue on "Time Interval Train Services" regarding the 3.20 and 4.35 Waterloo departures for Bournemouth, is a reminder that the pre-war regularity on this line has been restored somewhat unevenly, with the result that the up service is now better arranged than the down.

The present 3.20 from Waterloo is an innovation. Before the war there was 2.30 on Fridays and Saturdays (at present a summer service only), a 3.30 stopping train as now (only faster), and the "Bournemouth Limited" at 4.30. The 4.35 is a substitute for the "Limited," which ran to Bournemouth Central non-stop in 116 minutes and arrived at Weymouth at 7.24, only six minutes later than the present 3.20, and a following 4.45 to Bournemouth, first stop Winchester. The former arrangement might well be restored, as the 3.30 would be speeded up and carry the traffic now handled by the 3.20, and the "Limited" would deal with the Weymouth line passengers.

An even more desirable restoration would be a service to stations west of Bournemouth after the present 6.30 from Waterloo, especially on Friday nights. If traffic would not be sufficient to warrant a 7.20 to Weymouth, as runs on Fridays before all Bank Holidays, the present 7.30 could resume its pre-war practice of running non-stop from Brockenhurst to Bournemouth Central, arriving about 10.30 in time to connect with a 10.40 to Weymouth similar to that which already operates on Saturdays.

Yours faithfully,

B. KNOWLMAN

The Scrap Heap

RAILWAYMEN ON THEIR METTLE

In the last 12 months a drive by the London Midland Region of British Railways to recover old nuts and bolts, steel rails, and other metal scrap has produced no less than 115,532 tons.

LINE-SHOOTING

An Iowa goods train was taking two hours to cover two miles on one part of its route. Railway investigators found that the crew were in the habit of stopping to pot rabbits and quail. Nine rabbits and three quail were confiscated.—*A report from Chicago, U.S.A., in the "News Chronicle."*

MUSIC WHILE YOU RIDE

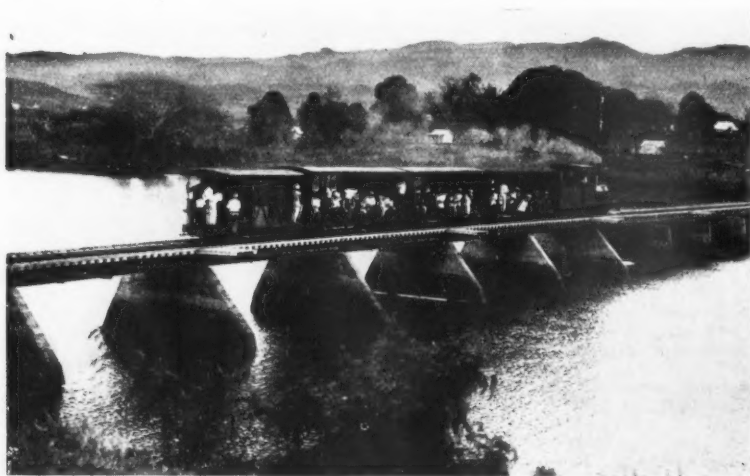
It is now perfectly legal for the Washington trams to pour forth music and advertising from radio loudspeakers to the fare-payers, no matter what they may think about it. The local Public Utilities Commission decided so on December 19 in spite of howls of protest from indignant travellers.

The objectors said radio interfered with their reading, and even thinking, and that it was *ultra vires* of the Constitution, anyway, because it deprived them of their freedom of speech, since nobody could talk on a tram while listening to the latest tear-jerking episode from a "soap opera."

The commission disagreed. Radio on trams, it declared, was not inconsistent with the safety, comfort, or convenience of the public. Besides, it added, most of them liked it. There will be no escape. Washington has 1,500 trams, and the transport commission says it is going to equip them all.—*From a B.U.P. report in "The Manchester Guardian."*

SUGAR MILL TRANSPORT IN FIJI

In 1882, the Colonial Sugar Refining Company, already well established in Australia at that time, opened its first Fiji sugar refining mill at Nansoni, and today this company owns five mills, together with an extensive works railway system. The photograph reproduced below shows one of the company trains conveying personnel over the Ba River near Rarawai.



Personnel train of the Colonial Sugar Refining Company crossing the Ba River near Rarawai in Fiji (see paragraph above)

TRUNK LINE TRAGEDY

Bullets from a Bren gun ended the life of Tarka, a three-ton elephant which went wild while travelling in a circus train at Preston on December 17. Rail traffic was held up for four hours while Tarka stamped and trumpeted, smashed the body of the truck, and injured a trainer who tried to soothe it. Police, rail, and R.S.P.C.A. officials called in soldiers from Fulwood Barracks. Armed with rifles and a Bren gun, the soldiers were shunted slowly up in a truck towards Tarka.

An R.S.P.C.A. inspector who went with the soldiers said: "We managed to finish the animal with the first shots. It crashed over in the truck, and I climbed on board and fired two shots into its brain with a humane killer."—*From "The Times."*

100 YEARS AGO

From THE RAILWAY TIMES Dec. 29, 1849

In closing our present volume, we should have been glad if it had been in our power to offer any congratulations to our readers upon the improved aspect of railway property. From that gratification we are debarred; and we cannot enter upon the new year with any augury of increased prosperity. It remains only, by renewed vigilance and economy, to repair to the utmost the injury wrought by the faults, follies, and frauds of the past; to give a vital energy to Boards of Direction by the introduction of really working men, as suggested in the report of the Committee of Investigation of the Caledonian Company:—to demand the most specific, plain, and full detail of expenditure in every department; to exact from the Directors that amount of responsibility which is indicated by a sound, ample, and permanent investment in the stock of their own lines—only, if possible; and to await with patience that restoration which, under God's providence, the prosperity of the country cannot fail to impart to its greatest and most powerful agent—the railway system.

STEAM FROM ELECTRIC ENGINE

A member who, regularly passes through Victoria Station, Southern Region, shortly before the 9.5 a.m. New-haven boat train is due to depart, reports that on several successive mornings he

was puzzled to note a thin column of steam blowing off from the neighbourhood of the electric locomotive which now usually works the train, and at first assumed that a steam locomotive was standing on another track immediately behind. Only later did he realise that this came from the small steam heating boiler which the electric locomotive necessarily carries in order to heat the steam-type coaches of the train; there is a certain comical incongruity in seeing steam escaping from an electric engine!—*From "The Electric Railway."*

TRAMS STOP IN HONG KONG

After the refusal of tram conductors to collect fares, in an effort to force their demands for increased salaries and a high cost of living allowance, the Hong Kong Tramways Company took off all trams and announced the dismissal of all conductors who refused to collect fares. Throughout the Christmas season the company kept the trams running at a loss of about £40,000.—*From "The Star."*

WINTER TOURIST TRADE

Trade exhibitions are attracting more business visitors to Britain during the winter. Figures issued by the Travel Association (Tourist Division of the British Tourist & Holidays Board) show that of the 21,698 foreign visitors who arrived in November no less than 40 per cent. came on business. This figure is 15 per cent. higher than for the same month last year and a 12.6 per cent. increase on the pre-war November average. The number of American visitors during the month, 4,073, shows an increase of 66 per cent. compared with November last year.

THE OLD RAILWAY

Along our glebe
The old trains go
Wheezy and worn
And terrible slow,
Only three or four
Go by all day;
There used to be more
The old folk say
Back a hundred years
When trains were new,
And folk came a-running
When the whistle blew,
And the engine roared past
Going like the wind,
With trucks and carriages
Rumbling behind,
And the passengers all cheering,
And the Guard so bold
Sitting on the top,
So I've been told,
And the speed it went
Made folks feel queer,
And scared all the horses
And Lord Cowper's deer.
But now they reckon
The old train's slow,
And in buses and cars
The folk all go
A-shopping and a-marketing
Up to the Town,
So they're going to close
The old railway down,
But many will sigh
When naught remains
Of our old railroad
And its little trains,
For down in the village
The old folk know
Those days were happiest,
Long ago.

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OVERSEAS RAILWAY AFFAIRS

(From our correspondents)

SOUTH AFRICA

Cape Western Electrification

Work on the electrification of the main line between Cape Town and Tlouws River is proceeding steadily, and a chain of twelve substations is being erected along the route. The substations at Salt River and Goodwood have been completed and the electrical equipment is being installed. The next substation to be completed will be at Bellville, where work has begun on the overhead system. A further substation has been planned at Eerste Rivier for electrifying the Bellville-Stellenbosch loop. The line is to be used for ordinary traffic and as a relief for main line traffic.

When the line is electrified to Tlouws River, the general voltage will be raised from 1,500 to 3,000. The first section to have the higher voltage will be the Cape Town to Bellville line, and later the voltage on the suburban line will be raised. On the reclaimed ground at Salt River preparatory work is being done for new sheds for electric trains.

NIGERIA

Coal Strike and its Effects

November was most unsettled, not only for the railway, but for the whole of the colony. The government colliery at Enugu on which the railway depends for fuel began a "go slow" policy due to labour trouble on November 8, and it was, therefore, necessary to reduce the railway services by 50 per cent. on November 17, as stocks of coal had been reduced by then to less than 14 days supply. The normal reserves of coal are for six to ten weeks, but in the early part of the year the railway was not able to move all coal offered, and later the colliery was not producing its normal output so that reserves had dwindled to two weeks supply on the whole system.

Calls were made on the United Kingdom and South Africa for supplementary supplies, but Nigeria was indebted to the Gold Coast Railway for assistance in diverting 6,000 tons at the critical period.

On December 5 services were increased to 75 per cent, and normal services were resumed on December 12.

The colliery, which normally produces about 2,000 tons a day, had an output of only 25,000 tons during November; 25,000 tons of coal are still to be received from the United Kingdom and South Africa to build up reserves which are now almost completely exhausted.

It is unfortunate that just as the railway was really reducing the accumulation of traffic, there should arise this coal shortage which has considerably upset its economics; the shortfall on this account is estimated at £70,000.

WESTERN AUSTRALIA

Centralised Traffic Control on the South West Line

Expenditure of more than £500,000 on works and materials to establish centralised traffic control on the South West line has been approved by the State Government.

The Minister for Railways said that one of the most important problems facing the railway administration was the handling of traffic on the South West line between Perth and Brunswick Junction. For some time it had been recognised

that, with expanding production and increased coal traffic, some alteration was called for.

Several proposals have been investigated, including duplication of the line, with or without automatic signalling, but including yard improvements. The latest estimate of the cost of such work over the 80 miles of track involved is £1,150,000 for duplication without automatic signalling, and £1,340,000 with automatic signalling.

An alternative to duplication is partial duplication and centralised traffic control, at an estimated cost, including station yard improvements, of £494,000, and, in view of the great saving in cost and materials between the two projects, it was decided that C.T.C. was the best immediate solution to the problem.

It is estimated that with the installation of C.T.C., the existing track capacity can be increased from 26 trains to between 45 and 50 trains a day at least, sufficient to handle all the traffic for probably the next 20 years. If, by that time, duplication should be necessary, materials required for C.T.C. will be utilised in any duplication proposals.

The proposals covered by the scheme are duplication between Armadale and Byford, with automatic signalling and a shunting neck from Byford to Cardup to cater for brickworks, etc., and C.T.C. from Byford to Brunswick Junction, with provision of long crossing loops at the various sidings. Station yard improvements and additions at Armadale and Pinjarra will cater for the increased traffic.

If standard gauge proposals, now under consideration, should be extended to Western Australia, the installation of C.T.C. will not present any obstacle, and the materials used will be utilisable or easily recoverable for use elsewhere.

TASMANIA

Articulated Railcars

A trial run was recently made from Hobart to Colebrook and back of one of six articulated diesel railcars, which are intended for main-line service between Hobart and Launceston, and will reduce the journey time by 45 min.

The cars, which are being delivered at the rate of one a month, were designed by Tasmanian railway engineers and built by the Commonwealth Engineering Co. Ltd., Sydney. The power unit is designed and supplied by the Drewry Car Co. Ltd. Power is from a 150-h.p. Gardner diesel engine, transmitted through a Vulcan-Sinclair fluid coupling and a Wilson self-changing gearbox to the drive.

The two sections of the car are joined by a flexible pivot on a common bogie. Accommodation is for 58 passengers. The cars run as one unit or as a three-unit train. There is pressure ventilation and fluorescent lighting, and luggage and lavatory accommodation are provided.

Body panels are of aluminium, finished in primrose and green; interior panelling is of selected maple veneer. Tare weight of the unit is 33 tons 14 cwt.

£3½ Million Rehabilitation Plan

The Commissioner for Transport recently stated that the large amount which would be necessary for the electrification of the railways could not be justified until

the production and population of the State increased.

The diesel-electric locomotives on order from Great Britain will enable many of the advantages of electric traction to be obtained without involving the large capital expenditure required for complete electrification. Stating that Parliament had already approved £3,000,000 for the provision of modern rolling stock, particularly for freight haulage, the Commissioner said that the Transport Commission had developed further proposals, which would involve an expenditure of at least an additional £700,000 for the purchase of new passenger rolling-stock and modernisation of existing coaches, including track improvements. The Commission was also examining the necessity of improving the layout of yards, lengthening loops, and opening additional crossing places. It is planned to introduce electric train staff working at these crossing places controlled by automatic machines so that no additional costs for station staff will be incurred.

Preliminary surveys have been made of a deviation of the main Hobart-Launceston line to eliminate heavy gradients and sharp curves. This might perhaps prove more economic than improvement of the grades and curves on the existing track. Surveys are also being made to eliminate heavy gradients on other portions of the system.

CANADA

Temiscouata Purchase Approved

The House of Commons has approved the purchase of the Temiscouata Railway (see our December 23 issue). The C.N.R. will spend \$1,144,000 on modernising the line in the first three years.

SWITZERLAND

Reconstruction of Station Buildings

Among the important reconstructions of station buildings of the Federal Railways the remodelling of the station building at Chur was a considerable achievement. The work was begun by the end of the summer of 1947 and not completed until early last autumn. The station building has been entirely modernised as well as enlarged.

In Canton Solothurn, the station building of Grenchen, a centre of the watch industry on the Solothurn-Bienne main line, has been replaced by a large up-to-date structure. Grenchen-South (Grenchen-Süd) is 6·8 miles from Solothurn, and 1·8 mile north-east of Lengnau, where the main line for Moutier and Basle branches off, crossing the Solothurn-Bienne line by a viaduct rising towards Grenchen-Nord Station, on the north west of the town. North of the station begins the Grenchenberg Tunnel, 28,130 ft. long, ending near Moutier. The new Grenchen-Süd Station was opened early in November.

Rhaetian Railways Budget for 1950

The 1950 budget of the Rhaetian Railways envisages a working loss of fr. 2,637,400. The working receipts have been estimated at fr. 18,500,000, or some fr. 1,300,000 less than the total in 1948. This decline will primarily be due to a heavy decrease in passenger receipts. The prospects of goods receipts have been judged more optimistically because of an expected increase in connection with the building of hydro-power stations in the Grisons and the consequent transport of materials. Wages and salaries as well as stores and materials will account for an expenditure of fr. 24,200,000 or about

fr. 700,000 less than the total for 1949 envisaged under this head.

It is doubtful whether it will be possible to provide for any further depreciation and for the interest service of the first-series loan granted by the Canton of the Grisons. The interest payable on the second-series loan has been written off. The loss in interest thus resulting to the detriment of the Canton amounts to fr. 1,568,000.

The problem of the high fares which adversely affect the passenger traffic on the Rhaetian Railways is still undecided, and for the time being no general reduction is envisaged; however, endeavours are being made to revive traffic by organising collective journeys at special fares.

FRANCE

Laroche-Dijon Electrification

The electrification of the Laroche to Dijon section of the Paris-Lyons line has been completed and the first electric train was run on December 15. Regular electric passenger services will probably not be in operation until next May, but electric haulage of freight trains will begin in January. Electrification of the section from Paris to Laroche is due to be completed at the end of 1950; that from Dijon to Lyons will be finished later.

Reconstitution of Material

From January 1, 1947, to December 31, 1949, the S.N.C.F. will have placed in service 1,365 steam locomotives and 1,032 tenders, 87 electric locomotives, 107 diesel locomotives, 95 railcars and 36 trailers, 33 locotractors, 265 passenger coaches, 80,504 goods wagons, and 480 vans. In addition, numerous repairs have been carried out. Regarding tool equipment, war losses have been largely offset by the reception of 4,000 machine tools, 11,000 portable electric and pneumatic machines, 200 compressor groups, 400 welding sets, and 430 cranes and other lifting machines. Orders are in hand for delivery between January 1, 1950, and December 31, 1952, of 87 steam locomotives and 122 tenders, 142 electric loco-

motives, 43 diesel locomotives, 33 locotractors, 147 railcars, 40 trailers, 303 passenger coaches, and 8,844 wagons. By December, 1949, the total expended for the reconstitution would be some fr. 102,000 million. For 1950, the planned expenditure would amount to fr. 28,450 million, comprising only fr. 800 million for new orders.

New Channel Ferry Boat

The National Railways recently placed an order for a 4,000-ton ferry boat with a Danish shipyard. The vessel, which will accommodate four trains and 40 motor cars, is intended for the Dunkirk-Dover route. It will cost Danish kr. 14,000,000, approximately £723,500.

JUGOSLAVIA

New Railway in Serbia

A new standard-gauge railway, 46 miles long, was recently opened to traffic in Serbia, from Sabac to Zvornik, on the River Drina, which separates Serbia from Bosnia in that region. Part of the new line is a conversion of the former 2 ft. 6 in.-gauge line opened in 1909 between Sabac and Loznica. Conversion to standard gauge began in July, 1948, and in December that year the extension was put in hand to Zvornik, 10 miles further on. The new line is of importance for coal traffic, particularly for supplies to Belgrade, Zvornik being a centre of the extensive coalfields in north-eastern Bosnia. This is the third railway built since 1945 for this coal region.

Reconstruction of Sarajevo-Ploce Line

It is estimated that conversion of the 124-mile Sarajevo-Gabela-Ploce line from 2 ft. 5½ in. to standard gauge, entailing also the realignment of some sections, will be completed in 1951. This includes also electrification of the whole line and the completion of the Jablanica hydro-power station from which power is to be derived.

Jablanica, near where the power station

is being erected, is 54 miles south of Sarajevo and at the northern end of the narrow gorges of Neretva River, part of which will be converted into a storage lake. Immediately above the northern end of the storage lake will be the entrance to the longest tunnel of the new line, about 6,560 ft. long, and one of the 30 new tunnels necessitated by the realignment.

Formerly, steep sections of the present narrow-gauge line necessitated rack working, as outlined in *The Railway Gazette* for August 26, but on the new line there will be all adhesion, although gradients of up to 1 in 40 will not be avoided. Electric traction will enable goods trains of 950 tonnes to be worked at double the speed which would be possible with steam traction.

When completed, the Sarajevo-Ploce line, in conjunction with the standard-gauge Sarajevo-Vrpolje line and the Vrpolje-Belgrade section of the Zagreb-Belgrade main line will form the shortest standard-gauge connection between the Belgrade and the Adriatic, 396 route-miles as compared with the existing 399-mile standard-gauge route from Belgrade to Rijeka via Zagreb. Although the difference in railway mileage is only trifling, it must be borne in mind that Ploce is more than 220 miles south of Rijeka, which means a considerable saving in expenditure and time connected with maritime transport. Timber, the principal export of Bosnia, will greatly benefit from the new standard-gauge route and the development of Ploce harbour.

CZECHOSLOVAKIA

Express Goods Service with Finland

An express goods service for complete wagon loads only has been instituted between Prague and Helsinki. The wagons leave Prague for Gdynia every Saturday and are transferred between Gdynia and Helsinki by ferry-boats. Northbound, ferry-boats leave the Polish port on Saturdays, arriving at Helsinki on Mondays.

Publications Received

Freight and Mixed-Traffic Locomotives.

By R. Barnard Way and Reginald E. Wardale. Surrey: Wells Gardner Dartons & Co. Ltd., 49, Brighton Road, Redhill. 4½ in. x 7 in. 128 pp. Illustrated, Paper covers. Price 3s.—As a fashionable pastime among British youth, train spotting is nothing diminished, and this booklet should be a useful means of heightening interest in the locomotive as a work of engineering, rather than as the mere bearer of a number. Layout is similar to "British Passenger Locomotives," the companion volume, and a certain simplicity in approach should recommend the booklet to those young persons as yet unversed in technicalities.

British Railways for Boys. By Cecil J. Allen. A Junior Teach-Yourself Book. London: English Universities Press Limited, St. Paul's House, Warwick Square, E.C.4. 9 in. x 6½ in. 96 pp. Illustrated. Price 5s.—The author deals with a variety of subjects all of which will interest the young railway enthusiasts. The author traces the growth of the railways from the end of the last century, when the smaller railways were still independent of the larger systems, with their own design of locomotives and

rolling stock, and individual colour schemes. The book is full of interest and tells of some of the difficulties which the civil engineers have to overcome when routing the track, problems which arise in building bridges, and blasting a way through rock, when tunnels cannot be avoided. Of interest also, is a chapter devoted to famous British expresses, and the account of a trip on the footplate of the "Silver Link" when the author's most vivid impression was hurtling through Hitchin at 107 m.p.h. Considerable space is given to signalling and train control, illustrated by diagrams.

Isambard Kingdom Brunel. By S. E. Buckley. Harrap's Great Engineers Library. London: George Harrap & Co. Ltd., 182, High Holborn, W.C.1. 7½ in. x 4½ in. 64 pp. Illustrated. Limp cloth. Price 2s. net.—This is a brief outline of Brunel's career and his attainments, from his appointment in March, 1833, as engineer to the system which became the Great Western Railway. The book deals with the obstacles Brunel had to face in the building of the Devon and Cornwall railways, and the London to Reading section of the G.W.R. The crossing of the Thames at Maidenhead was a difficult problem, and Brunel built his bridge of brick, with spans of 128 ft. In spite

of criticism the bridge has borne the weight of the Great Western main line trains for more than 100 years. The author writes of Brunel, however, not only as a railway engineer, but also as a builder of ships, including the *Great Britain*, the first ship to be built of steel, and the *Great Eastern*. The book should be of considerable interest to those who enjoy reading the history of railways and of the engineers who build them. Mention must be made of the account of the building of the Saltash Bridge, which carried the G.W.R. across the River Tamar from Devon to Cornwall on its way to Penzance, which was opened in 1859, and with a certain amount of strengthening now carries trains of heavier loads.

Refractories in Foundries.—The British Iron & Steel Research Association has published a 52-page report of the proceedings of a two-day conference held at Leamington Spa in May. The object of the conference was to discuss problems arising from the use of various types of refractories in converters and cupolas. A considerable amount of research work was necessary for the preparation of the papers. Copies of the report can be obtained from the Association, 11, Park Lane, London, W.1.

Main-Line Bridge Replacement in Sweden

Within a three-hour line occupation, a 100-ft. single-line span was replaced by two continuous 50-ft. double-line spans—with a new pier—on a slightly different alignment

IN the alignment of the Gothenburg-Stockholm main line occurs the longest section of straight line in Sweden, broken only by the construction, in 1907, of a skew bridge over the river Osan—between Skövde and Ulvåker stations—which is a few feet off the centre line of the long straight.

Skövde, 195 miles from Stockholm and 90 miles from Gothenburg, is the only station at which the "Gothenburger" express calls between Stockholm and Gothenburg, and is the junction for Karlsborg. Ulvåker is situated just under seven miles north of Skövde.

This section is now being doubled and the opportunity has been taken to build the new double-line bridge on the correct alignment and so remove the previous kink

abutments and the new mid-river pier was begun in 1946 and practically completed in July, 1947. The abutments consist of reinforced concrete encased in granite, whereas the pier is of reinforced concrete only.

The next stage of operations was to erect trestle falsework on the downstream side of the old bridge, on which the new superstructure could be assembled in preparation for the replacement. Due to supply difficulties, this work had to be postponed until October, 1948. The main girders were welded in the workshops, but the remaining steelwork was welded at site.

For the reception of the material, a special siding was laid, leading down to the falsework, which was 2.5 metres (8 ft.

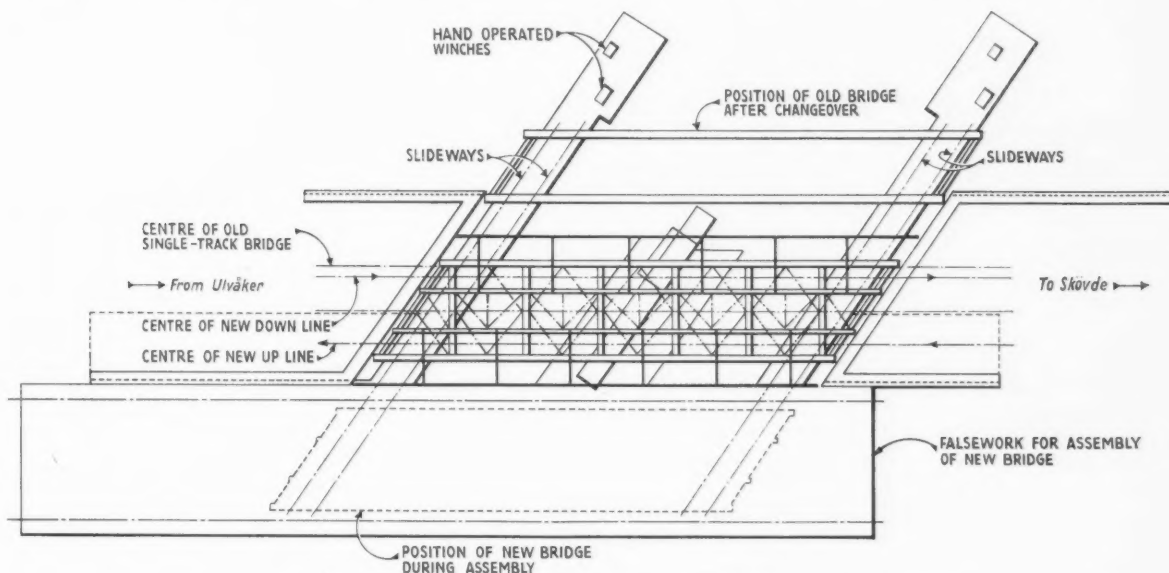
vided on which 8-in. by 8-in. bearing timbers supporting the spans could slide. The bearing surfaces were planed, soaked in boiled whale oil and well soaped. The bearing timbers under the old and new spans were coupled up with 1½-in. round-iron rods which were fitted with eyes at both ends.

Two three-ton and two 1½-ton hand winches were used, with block and tackle connections to the old span-bearing timbers, for slewing purposes and the slideways were fitted with measuring scales to keep a check on the uniformity of movement on both slides.

Lifting and Lowering

Lifting and lowering operations were effected with the aid of two 100-ton and eight 50-ton hydraulic jacks. A labour force of 50 men was employed during the changeover, which took place on the morning of March 21, 1949, to the following schedule:—

5.56 to 6.38: The last train having crossed the old bridge, the rails on the



Position of old and new bridges, showing method of slewing adopted for changeover

in it. This task, which was complicated by a maximum permissible line possession of 3 hr., is described in our Swedish contemporary *Teknisk Tidskrift* by two of the engineers who were concerned in the work.

The old single-line bridge had a single clear span of about 31 metres (102 ft.), measured on the centre line of the bridge, and had a skew of 53 deg. It has been replaced by a double-line structure with the same skew, consisting of two continuous spans each of 15.34 metres (approximately 50 ft.), with a new pier in mid-stream.

The bridge was designed by the Bridge Department of the Swedish State Railways, and has an all-welded superstructure consisting of main girders 2 metres (6 ft. 6 in.) deep, eight cross-girders 1.2 metres (almost 4 ft.) deep, and stringers 0.77 metres (2 ft. 6 in.) deep. Rail-level is roughly 11 metres (36 ft.) above normal water level. The weight of steelwork involved in the new structure was about 75 tons.

Work on the extension of the existing

2½ in.) below main line rail level. The superstructure was ready in December, 1948.

Apart from the short time available for the changeover, there were other difficulties. The river makes a sharp bend, and has high banks immediately above the bridge. Also, the old bridge had deck trusses, so that the upstream end of the new pier could not be built to its full height before the old span was removed. Finally, the possibility of ice pressure had to be considered.

The Changeover Operation

It was eventually decided to slew out the old span and slew into position the continuous new spans simultaneously in the upstream direction, common slideways being used for both superstructures. For this purpose unseasoned deal-wood timbers 8 in. deep and 9 in. wide were laid on the abutments, and 3-in. x 8-in. planks were bolted to their sides, projecting upwards for approximately 1 in. above the timbers.

Channels 1 in. by 9 in. were thus pro-

vided with the aid of two 100-ton and eight 50-ton hydraulic jacks. A labour force of 50 men was employed during the changeover, which took place on the morning of March 21, 1949, to the following schedule:—

5.56 to 6.38: The last train having crossed the old bridge, the rails on the

latter were removed and it was lifted from its bearings. The tracks on each side of the bridge were slewed into their new positions.

6.39 to 6.49: The old span was lowered on to its bearing timbers on the slideways and the rods were coupled up between the old and new spans.

6.50 to 7.12: The slewing was completed, the distance slewed being 5.4 metres (17 ft. 9 in.).

7.13 to 7.44: Staging was built up on the upstream end of the pier to carry the new superstructure.

7.45 to 8.29: The new superstructure was lifted from the slideways and lowered on to its bearings. The rails were linked up.

8.30 to 8.45: The overhead electric transmission wires were adjusted and meanwhile a ballast train was allowed across the new bridge.

8.46: The line-block was removed.

8.57: "The Gothenburger," running 3½ min. late, crossed the new bridge 3 hr. 1 min. after the last train had crossed the old span.

Swiss "Re 4/4" Locomotives in Service

Long mileages run with loads averaging over four times the locomotive weight

SINCE the first "Re 4/4" electric locomotives of the Swiss Federal Railways were placed in service early in 1946, the sphere of operation of this versatile Bo-Bo design has been extended until the average individual mileage now amounts to 106,876 miles a year. Their performance with the inter-city expresses formed of lightweight stock was described in our January 28 issue, and it is with these duties that they

steel coaches. When running in the opposite direction the load has to be limited to 315 tons, or 11 light steel coaches, on the Lausanne-Palezieux section, where the first ten miles are entirely at between 1 in 53½ and 1 in 55 except for a mile at 1 in 77 and three very short level breaks through stations.

By the spring of 1948 the number of "Re 4/4" locomotives in service was

passenger trains. For such work they were adopted as far as possible on routes where their special qualities could be fully utilised, for instance on lines with many curves and gradients.

Annual Mileage

Up to the end of 1948 the "Re 4/4" locomotives had run a combined total of 4,200,000 miles, or an annual average of 106,876 miles per locomotive. The highest individual annual mileage was 158,584 miles run by locomotive No. 410 in 1948, whilst the longest monthly runs lie between 15,534 and 16,777 miles. The maximum scheduled daily mileage for a single loco-

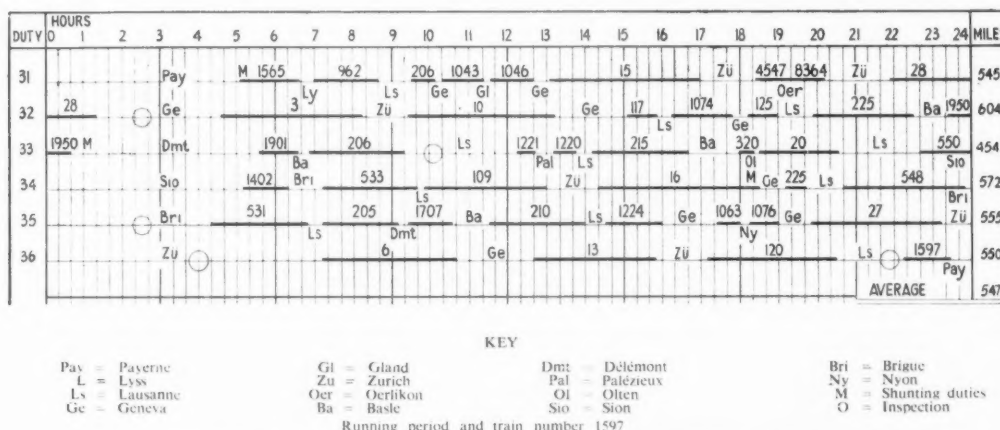


Fig. 1—Six-day rotation of duties for six "Re 4/4" locomotives at Lausanne shed

are associated primarily, but experience has shown their suitability for very different purposes.

Writing on these machines in *Schweizerische Bauzeitung*, Dr. E. Meyer, Deputy Chief Engineer of the Swiss Federal Railways, records the introduction in December, 1948, of the first push-pull train with an "Re 4/4" locomotive controlled from a driving trailer in one direction of working. This unit operated first on Berne-Lucerne services, and ran later between Lucerne and Zurich.

Suitable for Severe Gradients

The low weight per axle (13 tons 16 cwt.) and the double bogie arrangement make the locomotives suitable for secondary lines with sharp curvature, and within the limits set by their total adhesive weight of 55 tons 3 cwt. they can work trains over severe gradients. Regenerative braking was included in the specification with duties of this kind in view. For loads in excess of what a single locomotive can handle, two can be coupled together and controlled from one cab. An illustrated description of the class appeared in our issue of November 8, 1946. Construction was shared between the Swiss undertakings of S.L.M., Brown Boveri, Oerlikon, and Secheron.

Dr. Meyer compares the "Re 4/4" 1-hr. rating of 44 h.p. per ton with the 22 h.p. per ton of the Swiss Federal Railways "Ae 3/6" series which previously worked the fast inter-city trains, and with 24 h.p. per ton in other Swiss Bo-Bo designs. At first the "Re 4/4" locomotives were used exclusively for hauling light express trains. The maximum trailing load on the Zurich-Berne-Geneva route was fixed at 438 tons, corresponding to a train of 14 to 15 light

sufficient to allow all light express trains to be hauled by them. A typical roster for six "Re 4/4" locomotives from the Lausanne depot used mainly on these services is shown in Fig. 1, and a sketch map of the routes traversed in Fig. 2.

Additional locomotives completed during 1948 were allocated to an increasing extent to hauling ordinary express and slow

motive, 652 miles, occurred in the summer timetable of 1948. For comparison it is mentioned in Dr. Meyer's article that the average annual mileage per main-line locomotive on the Swiss Federal Railways in 1948 was 70,836 miles.

The trailing load hauled by "Re 4/4" locomotives up to the end of 1948 averaged (Continued on page 767)

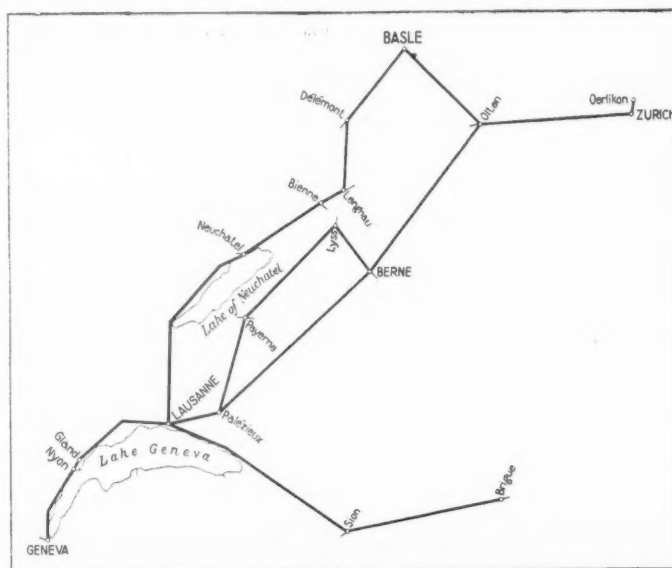


Fig. 2—Sketch map of journeys worked by "Re 4/4" locomotives shedded at Lausanne

South African Railways "3E" Class Electric Locomotives—4*

Auxiliary machines comprise two 3,000/110-V. motor-generator sets with blowers for the traction-motors, and a compressor and exhauster operating at 110V.

EVERY "3E" class locomotive has two identical motor-generator-blower sets, one of which normally supplies current to the exhauster motor, and to the coach lighting when required; and the other to the compressor motor, the battery, the locomotive lighting, cab heating, and the control gear. These machines are continuously rated as follows (to B.S.S. 173, 1941): motor—37 h.p. at 12 amp., 2,800 volts, 1,130 r.p.m.; and generator—18 kW. at 164 amp., 110 volts, 1,130 r.p.m. The blower is designed to supply 8,000 cu. ft. per min. at 1,400 r.p.m.

The set is self-ventilated, drawing filtered air from the main duct. The air passes between the field coils and over the armatures, and through ventilating ducts in the commutator bushes and armature cores of both motor and generator. Very full ventilation with clean air is provided in this way.

The motor is series wound, the speed with no generator load being kept down to 1,600 r.p.m. at 2,900 volts by the fan load, which as it varies as the cube of the speed, is ideal for this purpose. It was necessary to design the motor to stand up to violent variations of voltage due to pantagraph jumping, section insulators, and line surges; and also to withstand short circuits during voltage interruptions owing to the presence of the main motors across its terminals. For such service the series motor, with its relatively undamped flux, is preferable to a compound machine.

Special Precautions Taken

Special precautions were taken to enable the motor to withstand the foregoing conditions, and tests have shown that surges from 2,350 to 5,000 volts, produced by cutting out resistance, can be withstood without flashover. Voltage surges in service are generally neither so steep nor so prolonged as those produced on test by the above means. As regards short circuits, these produce practically no tendency to spark in a series motor, as the flux is destroyed by the short-circuit current before the latter has risen to a substantial value.

As these locomotives operate in an area where lightning probably is more severe than in any other part of the world, special precautions have been taken to make the motor as immune as possible from insulation failures. A special device for protection against lightning and very short surges is mounted on top of the set in a ventilated cover.

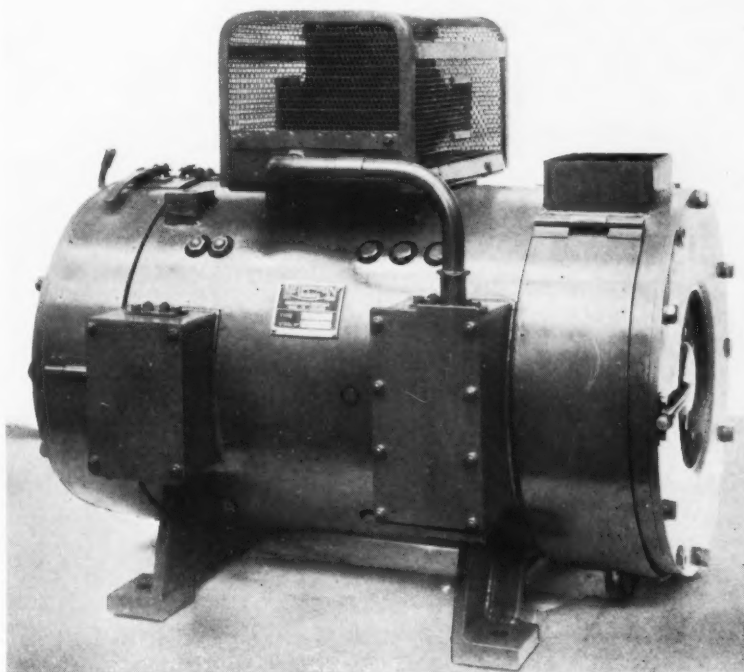
The motor is a four-pole single commutator machine with interpoles. The generator is compound-wound with interpoles, the main field being excited by a shunt winding, a series winding in the load circuit, and a winding consisting of a few turns in circuit with the motor. The series turns are arranged to give fairly level compounding at the average line voltage in order to reduce the duty of the automatic regulator.

The small winding in circuit with the motor ensures that the generator field is given correct initial excitation every time the set is started, and eliminates the risk of reversal of polarity by reversal of its

permanent magnetism during testing, for example, a risk which is always present with generators having self-excitation only. The generator is designed to give its full load current and maintain its full voltage in the event of the line voltage falling even to as low a value as 2,500 volts. The general mechanical construction of the set is rugged and simple. Motor and generator have a common yoke and their armatures are mounted on a common shaft, so

ensure the retention of the lubricating grease and the exclusion of dirt and moisture. Grease pipes are provided on the end housings, leading from easily accessible nipples to the interior of the bearing chamber to provide for replenishing the lubricant.

The fan blowers for ventilating the traction motors are at the generator end of the machine, the runner being overhung and mounted on a taper shaft extension. This runner is provided also with a set of small blades which form the ventilating fan for the motor-generator set itself; air is drawn in at the motor end through a special air duct, and leaves through openings in the generator end housing. This method of ventilation has the advantage that carbon dust from the normal wear of the motor



A 3,000/110-V. motor-generator set, of which there are two per locomotive

that only two bearings are required, a ball bearing being fitted at the motor end and a roller bearing at the generator end, the former providing both for journal load and endwise location whilst the latter allows for differential expansion of the shaft and yoke and for small inaccuracies of the components.

The yoke is fabricated as a mild steel cylinder with four plain supporting feet welded on. The end housings are also fabricated from mild steel and are provided with tapped holes for forcing them out of the yoke. The bearings are mounted in malleable iron cartridges so that the armatures can be removed from the machine for overhaul or inspection without the bearings being removed from the shaft or from the cartridge, or exposed to dirt and damp whilst the machine is overhauled.

The inner caps of the bearings are formed integrally with the cartridges; the outer caps are separate castings. Where the shaft passes through these caps, special labyrinth grooves are formed by means of throwers on the shaft, so as to

brushes is drawn away from the high voltage end of the machine, towards the low voltage end, and is therefore not likely to be deposited on high-tension brushgear insulation or on the exposed high-tension commutator V-ring insulation.

The armature is balanced both statically and dynamically. Special channels to carry balance weights are turned in the commutator bush at each end of the machine and in the central common coil support, so that dynamic balancing is facilitated and there is no need to resort to putting additional weight on armature bands. The armature punchings and endplates are a press fit on the shaft, with keys to locate them. The commutators are at the outer end of the armatures. Coil supports and endplates for each armature are provided by the central casting between the two cores. The outer coil supports are integral with the commutator bushes; this method of construction prevents moisture or dust from the ventilating ducts penetrating

* Previous parts of this article appeared in our issues of October 7, November 4, and December 2

into the commutator endwindings of the armature. Special precautions are taken to prevent dust creeping through into the endwindings between the armature endplates and the core of both motor and generator.

The armature windings of the motor consist of round wire insulated with enamel and an asbestos covering, the enamel being a synthetic variety with exceptional resistance to heat and abrasion,

and are taped with stout tape, mechanical protection being taped into the coils.

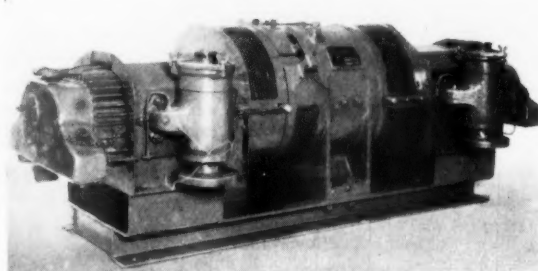
The coils are gum-impregnated. Circular wire, asbestos insulated, is used for all field and interpole coils except the generator interpole and series windings, which are of rectangular strap with asbestos insulation between turns. The three coils on each generator field pole are taped up together to form one composite coil.

All the field and interpole coils are

four square insulated brush arms mounted on a rocker, each arm carrying one brush-holder fixed to the bar by a stout clamp. The creepage distance along the brush arm from the brush holder to the iron parts of the rocker is $2\frac{1}{2}$ in., and is covered by a substantial porcelain insulator, providing a surface which is easily cleaned and quite immune from "tracking." The insulation covering at the armature end of the brush arms is sealed off completely by means of a



Motor-generator armature assembly



Motor-driven two-unit exhaustor

whilst the asbestos is the well-known felt-on type of covering. The use of enamel is intended as a safeguard against lightning.

The coils are wound in a special manner to ensure minimum bending of conductors, and are insulated with mica at all points both to earth and between top and bottom windings. A Leatheroid liner is used to protect the coil when being inserted in the slot, with additional protection in special recesses at the end of the slots. Very long coil extensions are provided at each end and great care is taken to ensure that the whole winding is as solid and securely held as possible, the steel bands, for instance, being applied while the armature is hot, a temporary band being employed to ensure that all coils are firmly in place before the final banding is applied.

The generator armature is wound with flat copper strap taped with mica tape. Mica insulation is used at all points, and the banding is carried out in the same way as on the motor. The armatures are twice treated in varnish, being stoved before and after each treatment.

Insulation

At the motor end, the endwindings are enclosed in a canvas hood and Micanite is employed to protect and insulate them from the bands. The hard-drawn copper segments of the motor commutator are insulated from each other with pure mica. Repeated applications of heat alternated with applications of pressure result in a solid structure both of the motor and generator commutators. After assembly and connecting up on the armature, both the commutators are seasoned by heating and running up to their maximum test speed several times, being tightened up after each heating and overspeed run.

After the final turning, the micas are carefully undercut 0.03 in. below the level of the copper and the edges of the copper bars are carefully trimmed.

The main poles of the motor and generator and the interpoles of the motor are built up of laminations held together by rivets and secured to the yoke by studs; the generator interpoles are solid and are secured by set screws. All the field and interpole coils are insulated with mica throughout

secured against vibration by means of curved springs carefully arranged to give the correct pressure. All the connections between the coils and to the brush gear and terminals are made with flexible cables. These cables are carefully protected from vibration by being fastened to staples in the yoke or to one another.

The brushgear of the motor consists of

plug Bakelised into the covering tube; tube and plug both consist of Bakelised paper.

The brushholders themselves are of the reaction type, the reaction angle being 35 deg. Pressure on the carbon is maintained by means of a coiled spring, mounted on a spring pin which is prevented from turning by a split pin. A tommy hole in the pro-



Brushgear of motor in motor-generator set

jecting part of the spring pin enables it to be turned with a small tommy bar to adjust the spring pressure. There are a number of holes for the split pin so that the selected brush pressure can be maintained. This method of altering the brush pressure is much less likely to be attempted by unauthorised persons than when the common type of spring adjusting lever is employed, and the design results in a much more robust construction.

The end of the spring presses direct on the carbon brush, and is shaped so as to give the correct pressure angle in conjunction with a suitable bevel on the top of the brush, thereby ensuring that the brush always lies against one side of the brush box, and stability of the brush is obtained. The carbons are fitted with pigtails.

The generator brushgear is similar to that of the motor, but the creepage is only that necessary for the 110 volts involved,

and the carbon and its holder are much larger so as to suit the heavier current involved. In both cases radial adjustment is provided to allow for commutator wear.

Terminal boxes are provided both for the motor and generator, consisting of steel boxes fabricated to the exterior of the yoke and fitted with sheet steel covers attached by set screws. Provision is made for the conduit which takes the outgoing cables. The terminals are of the clamp type, and two insulated rods to carry them are provided in each terminal box.

The rotary exhaustor is of the "figure 8" type, with no rotating or rubbing vanes. It has a capacity of 140 cu. ft. per min. at 1,350 r.p.m. being a double machine with one unit at each end of the motor.

The exhaustor motor is a series non-interpole machine rated continuously at

8.75 h.p. at 110 volts and 1,350 r.p.m. It is of the self-ventilated type, with one ball and one roller bearing, and is of very simple and sturdy construction. Ventilation of the motor and also of the exterior surfaces of the exhaustor parts is effected by fans mounted on the couplings.

Each locomotive has one Westinghouse "CM 38" type compressor, having a capacity of 38 cu. ft. per min. of free air, which is compressed to approximately 90 lb. per sq. in. The compressor is of the twin-cylinder type and is driven through gearing by a specially designed motor. With a gear ratio of 4.93 to 1, and a motor speed of 1,200 r.p.m., the compressor speed is 244 r.p.m.

The motor is rated to give an output of 7.5 h.p., with an input of 110 volts, 65 amp. The compressor is controlled by an automatic pressure-operated switch.

(Concluded)

Electric Traction on a Swedish Secondary Line



Swedish State Railways mixed-traffic electric locomotive at Orebro, on a train for Svarta and intermediate stations

Photo]

[K. Dobson

Swiss "Re 4/4" Locomotives in Service

(Concluded from page 764)

aged 240 tons, or over four times the locomotive weight. This average, which provides a measure of locomotive efficiency, is compared by Dr. Meyer with the corresponding ratio applicable to certain other Swiss Federal classes. The loads of "Ae 3/6" locomotives over the same period averaged only 1.9 times their weight, while for the most numerous S.F.R. class, the "Ae 4/7," the trailing load averaged a total of 2.4 times the weight of the locomotive.

The "Re 4/4" locomotives have fulfilled

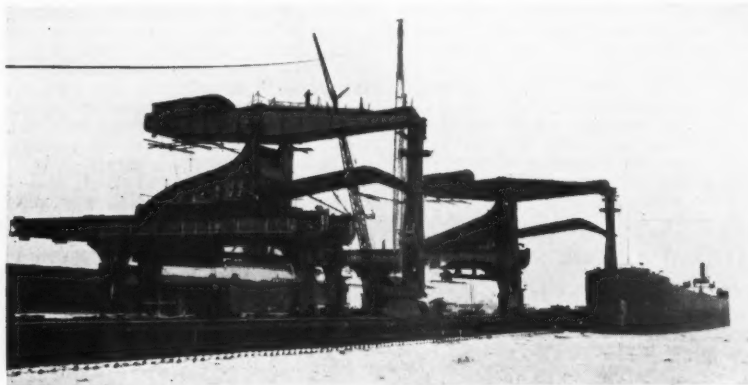
expectations even under intensive and severe operating conditions. The running is remarkably quiet and steady, and just as good as that of a light steel coach even at the highest speeds. Although they operate on lines with many curves, and the wheel diameter is only 3 ft. 5 in., the wear of tyres and flanges is very slight. Up to now the tyres have had to be returned only after running about 186,000 miles, and in some cases after even greater distances. Other favourable characteristics noticeable in the "Re 4/4" machines are simplicity of maintenance and the rarity of failures.

Major overhauls of the first two locomotives were undertaken as an experiment in 1948, when they had run 217,481 and 329,327 miles respectively. Examination

showed that the distance between such overhauls could quite well be extended to between 310,000 and 370,000 miles, whereas the older types needed major maintenance about every 186,000 miles. The cost of maintenance per mile including major overhaul was less than half the average figure for Swiss Federal Railways electric locomotives as a whole. Another major saving is effected in consumption of lubricant, resulting largely from the use of roller bearings for the running axles and the traction and auxiliary motors, most of these bearings being grease-lubricated. Emphasis is laid by Dr. Meyer on the fact that such economies have been realised in locomotives designed specifically for high-speed service.

New Great Lakes Coal and Iron-Ore Port—2

Method of operating the various yards, the wagon dumping, and the ore-unloading machines



The ore-unloading machines on the western pier

THE engineering constructional works involved in the building of the new lake-side port at Toledo were described in Part I of this article, which appeared in our issue of December 23. Its operation also has many features of interest, and in its design particular attention was paid to

the prevention of traffic congestion and to speeding up and simplifying operation, so as to ensure the smooth handling of a maximum tonnage of coal and ore during the months the Great Lakes-St. Lawrence route is free from ice.

Five machines cope with transshipment

of the coal and ore without difficulty, and the steady flow of traffic depends on a regular supply of ships to the berths and an uninterrupted feed and clearance of wagons, both loaded and empty. Measures to assure the fulfilment of these conditions include the provision of the 37-acre manoeuvring basin, ample yard capacity, and the effective layout of the four-road throat between the main grids. This layout makes possible free movement from any point in the receiving and despatching yard to any point in the dock area, as well as simultaneous movements through the throat of coal, ore, and empties, and also those to and from the locomotive depot and wagon-repair yard.

Feeding the Coal Dumpers

The method of feeding any one of the three coal-wagon dumpers is as follows. The loaded wagons are placed in each of the six roads of the relative 250-wagon dumper-feeding grid by a steam locomotive. Between each pair of these roads is a narrow-gauge track, on which a 30-ton electric pusher works. One of these three pushers then takes over duty and, by means of a side-extending buffing bar, which is stretched out between any two wagons, pushes the wagons ahead of the bar in the form of a short rake. In this way it can break up a line of wagons on either of the adjacent roads, and propel 10, or more, 70-ton loads to the end of the grid. When each rake reaches the end of the parallel tracks in the grid, two other electric pushers running on narrow-gauge



Coal-car dumper with Barney mule pushing coal wagon up its approach incline. One of the electric pushers can be seen on the right

tracks alongside the ladder, or gathering lines, in turn cut off the leading wagon on each side and place it on an inert retarder at the foot of the steep hump over the wagon-loader raised platform.

Working of Coal-Wagon Dumpers

At the retarder is a deep pit between the rails containing a steeply-inclined narrow-gauge track. On this track a Barney mule rises out of the pit behind the coal wagon and pushes it up the hump incline to the dumper platform.

On the dumper platform the wagon passes on to a cradle, where it is clamped, lifted and turned over, so that its contents are dumped into a funnel-topped telescopic chute. In the funnel pan the fall of the coal is checked by flow-retarders to prevent excessive breaking up, and, simultaneously, it is sprayed in passing with a chemical to reduce dust. It then slides down the chute to trimmers at the foot, which distribute the coal over the ship's hold with a minimum of breakage.

Meanwhile, the now-empty wagon in the cradle is righted and returned by the dumper to the original track, where the next loaded wagon being pushed up the hump gives it a push sufficient to start the empty rolling down the reverse slope of the hump. On its descent it runs through a pair of spring points just beyond

the bottom of the incline and continues up the counter-grade of a switch-back beyond, so designed that the empty will stop short of a dead-end at the top of the counter-grade, and run back again, this time taking the other road at the spring points.

This road continues on an easier falling gradient to an empties grid, and the speed of the wagon is controlled by another retarder, controlled from the dumper tower, before it reaches the grid. So smooth and mechanical is the whole operation that the complete cycle of feeding the dumper, dumping, and disposing of the empty is completed in 60 sec. Thus, if 70-ton wagons are used, 60 wagon loads, or 4,200 tons, can be loaded into a ship in an hr., and when the three dumpers are all working simultaneously, coal shipment is at the rate of 12,600 tons an hr.

It may be noted that each dumper is equipped with its own sub-station and auxiliary services, and operates as an independent unit. It also is fitted with automatic interlocking devices ensuring safety throughout its operation.

Ore-Unloading Machines

The two ore-unloaders can work either together in unloading one ship, or separately, in positions anywhere on the 700-ft. gantry-run along the western pier. They are of the Hulett type, discharging

into empty wagons on the four roads between their gantry legs. Each has a capacity of 15 tons a min. The loaded ore-wagons are propelled along the four roads by electric pushers to a 112-wagon seven-track grid, worked partly by electric pushers running on narrow-gauge tracks between certain roads and partly by steam locomotives on the standard-gauge tracks.

The locomotive running depot has a "one-stop" layout to expedite engine servicing. It includes conveyor-type coaling, water-treating, sanding and ash-removal plants; also a 100,000-gal. steel water tank, two columns, and a 50-ft. inspection pit.

General control over the port operation is centred in an office near the piers, and there is also a yard-control office near the throat; telephonic communication is installed between all points of the yards and port, and loudspeakers also are used. Work proceeds by floodlighting at night. This port, with all its up-to-date facilities, has been brought into use piecemeal during the past 12 months; the formal date of opening was in June, 1948.

We are indebted to our American contemporaries *Railway Age and Engineering News-Record* for some of the illustrations and most of the information embodied in this article, and to the New York Central System administration for the remainder.

(Concluded)

Demolition of Overbridge at Law Junction, Scottish Region

Destruction of a masonry arch crown with beam slung between two cranes



Cranes lifting girder and crown of arch, disintegrating due to upward thrust

JUST north of Law Junction, the Glasgow-Carstairs-Carlisle main line of the former Caledonian Railway and the Wishaw Deviation line run side by side. Until November 6, both were crossed by overbridges carrying an accommodation road. The main-line overbridge was a 30-ft. elliptical masonry arch with stone parapets and wing-walls. The adjacent bridge over the Wishaw Deviation is a

plate-girder and masonry abutment structure.

In recent months a coal heading has caused a local subsidence in the immediate vicinity of the main-line overbridge, and a drop of about 1 ft. 8 in. in the permanent way and in the bridge was anticipated. So local is the subsidence that the Wishaw Deviation line overbridge was not affected, but due to the local

nature of the subsidence, it was considered necessary to drop the main-line arch.

Before November 6, the parapet walls were removed, the spandrel walls were combed down, and the arch was bared from the crown to the tops of the haunches. On that day, a Sunday, possession of the up and down main lines was given to the engineers between 7 a.m. and 7 p.m. All main-line traffic was diverted over the Wishaw Deviation via Wishaw Central.

The arch was broken by two locomotive cranes, one on each side of the bridge, with a girder slung between them parallel to the tracks. The girder was lifted up to the underside of the crown of the arch, and at 10 a.m. was drawn up through the crown, disrupting it. The permanent way was protected from falling masonry by a mattress of sleepers. The work was completed and the line cleared of debris and re-opened for traffic by 6.30 p.m.

The abutments are being built up to carry a lattice-girder span in place of the arch. The work was carried out under the direction and by the staff of the District Engineer, Glasgow (South).

SCOTTISH STATIONS CLOSED.—As from January 2, the Scottish Region Bannockburn, Kinfauns, and Kirkgunzeon stations will be closed to passenger traffic and to freight traffic in less than truck loads. Passengers for Kinfauns will be booked to Perth, and for Bannockburn will be booked to Stirling, from which places bus services are available. Kinfauns parcels and miscellaneous traffic by passenger train and small consignments of freight train traffic will be dealt with at Glencarse Station. Passenger train parcels and miscellaneous traffic and freight train consignments in less than truck loads will be collected or delivered in Kirkgunzeon by road-motor based on Dumfries, and in Bannockburn by road-motor based on Stirling.

Cold Cathode Lighting at Nine Elms Goods Shed

Light distribution suitable for illuminating interiors of covered vehicles is obtained by fittings of special design



Dock at Nine Elms goods depot, with cold cathode lighting from fittings specially designed to illuminate the interiors of vehicles

MUCH study has been devoted in recent years to methods of speeding up the transit of goods by rail, particularly of those small consignments in which the general public is most directly interested.

Satisfactory working conditions at goods sheds are a fundamental necessity whatever other measures may be adopted, and experience has shown how much can be contributed in this direction by efficient lighting, which not only makes the work itself easier but creates an atmosphere that

is a stimulus to effort. A trial installation of cold cathode lighting, using fittings of special design, is now in use in a general merchandise shed at the Nine Elms goods depot of British Railways (Southern Region). The fittings were designed by the General Electric Co. Ltd. in conjunction with the Lighting, Water & Heating Section of the

Civil Engineer's Department, Southern Region. Instead of the three tubes being mounted in the same plane as in the standard three-tube industrial fitting, the central one is lower than the outside tubes. Thus, all three tubes can contribute without obstructing each other to lighting objects at platform level on both sides of the fitting.

The present installation comprises 19 of these fittings arranged in a single line on both platforms and across the end of one dock in the shed. Each contains three Osram Intermediate cold cathode tubes. The fittings are mounted at 18 ft. centres at a height of 12 ft. 6 in., which is higher than the previous tungsten lighting fittings and reduces risk of damage when long objects such as pipes or conduits are being handled on the dock. Only two bolts have to be undone to release a fitting for maintenance, and the electrical connection is broken by removing a socket.

As a result of the special arrangement of tubes, light is thrown well into the interior of covered rail and road vehicles. Fittings are spaced so that both ends of the interior of railway vans are lit up by the pair nearest to which they are standing. No portable lighting inside the vehicles is needed by staff engaged in loading or unloading.

Road vans and drays back up at right angles to the dock along one side of the shed. The light is thrown right to the back even of 15-ft. covered drays, both rows of fittings contributing in this instance and demonstrating the build-up of light obtainable in a shed equipped throughout in this manner. A further notable result of the special tube arrangement in the fittings is that upward light thrown from the central tube is relatively unobstructed by the reflector, and reaches the roof of the shed.



A covered road dray drawn up at the dock, showing how light thrown to the back of the vehicle enables packages to be seen clearly and labels read without using handlamps



The light from pairs of fittings illuminating both ends of interiors of covered wagons in the dock

RAILWAY NEWS SECTION

PERSONAL

We regret to record the death on December 22, at the age of 68, of Sir Montague John Eddy, C.B.E., for many years a prominent figure in the administration of the British-owned railways in Argentina. Sir Montague Eddy, who held, among other offices, the Chairmanship of the Buenos Ayres Great Southern Railway Co. Ltd. and of the Buenos Ayres Western Railway Limited, played a leading part in the recent negotiations for the acquisition by the Government of Argentina of the British-owned railways there.

The Railway Executive announces that, with the concurrence of the British Transport Commission, Mr. R. Simpson, Regional Staff Officer, Scottish Region, has been appointed Regional Staff Officer, London Midland Region, succeeding Mr. H. J. Comber, who is retiring next February.

Dr. Sayed Bey Abdel Wahid has been appointed General Manager of the Egyptian State Railways, subsequent to the retirement, for health reasons, of Abdel Meguid Pacha Badr.

Mr. George Chennell, Telegraph & Signal Engineer, and Mr. R. W. Peake, Maintenance Engineer, of the General Mitre (former Central Argentine) Railway, have retired on pension.

The directors of the Minneapolis, St. Paul & Sault Ste. Marie Railroad (Soo Line) have accepted the request of Mr. H. C. Grout to retire as President of the company from January 1. Mr. G. Allan MacNamara, Vice-President of Traffic of the parent Canadian Pacific Railway since 1948, and General Traffic Manager of the Soo Line at Minneapolis three years before that, has been elected to succeed Mr. Grout as President. Mr. MacNamara has been elected also a Director, and a member of the executive committee, of the Soo Line.

BRITISH ENGINEERS' ASSOCIATION

Mr. W. K. G. Allen (Joint Managing Director, W. H. Allen Sons & Co. Ltd.) and Mr. A. H. Chilton (Director, J. Stone & Co. Ltd.) have been elected Members of Council of the British Engineers' Association.

The undermentioned retiring members have been re-elected to the council: Mr. C. K. F. Hague (President of the B.E.A.) (Managing Director, Babcock & Wilcox Limited); Sir Greville Maginness (Chairman & Managing Director, Churchill Machine Tool Co. Ltd.); Mr. Eric A. Robinson (Managing Director, Superheater Co. Ltd.); Sir Basil Tangye (Chairman & Managing Director, Tangyes Limited); Mr. D. D. Walker (Managing Director & Secretary, Evershed & Vignoles Limited); Mr. J. S. Woodrow (Managing Director & Secretary, Pulsometer Engineering Co. Ltd.).

Mr. A. H. Peppercorn, O.B.E., M.I.Mech.E., Chief Mechanical Engineer, Eastern & North Eastern Regions, British Railways, who, as recorded in our December 9 issue, retires on December 31, was educated privately and at Hereford Cathedral School, and entered the service of the Great Northern Railway in 1905 as a premium apprentice at Doncaster Locomotive Works, first under Mr. H. A. Ivatt, and afterwards under Sir Nigel Gresley.



Mr. A. H. Peppercorn
Chief Mechanical Engineer, L.N.E.R., and
Eastern & North Eastern Regions,
British Railways, 1946-49

On completion of his apprenticeship, Mr. Peppercorn gained running-shed experience, and subsequently was appointed an Assistant to the District Locomotive Superintendent at Ardsley, later occupying a similar post at Peterborough. During the 1914-18 war he served in the Chief Mechanical Engineer's Department of the Royal Engineers in France, and, after carrying out various duties was finally appointed Technical Assistant to the Chief Mechanical Engineer at the Directorate-General of Transportation, France. On demobilisation he became District Locomotive Superintendent at Retford, and subsequently returned to Doncaster as Assistant-in-Charge of the wagon shops. In 1921 he was appointed Assistant to the Carriage & Wagon Superintendent at Doncaster, and on the formation of the L.N.E.R. in 1923 became Carriage & Wagon Works Manager at Doncaster; four years later he was appointed to a similar post at York. His next appointment, in

1933, was that of Assistant Mechanical Engineer at Stratford, and in 1937 he became Locomotive Running Superintendent of the L.N.E.R. Southern Area. A year later he was promoted to the post of Mechanical Engineer, North Eastern Area, at Darlington. Mr. Peppercorn returned to Doncaster for the second time in 1941, when he was appointed to the dual post of Assistant Chief Mechanical Engineer of the L.N.E.R. and Mechanical Engineer, Doncaster. Four years later he relinquished the latter post to give closer assistance to Mr. Edward Thompson, then Chief Mechanical Engineer, and to take charge of the department in his temporary absence. Mr. Peppercorn was himself appointed Chief Mechanical Engineer in 1946.

Mr. A. B. MacLeod, A.M.I.Mech.E., M.I.Loco.E., M.Inst.T., Stores Superintendent, Southern Region, British Railways, who has been appointed Stores Superintendent, London Midland Region, was educated at Cheltenham College, and joined the L.B.S.C.R. as a pupil at Brighton Locomotive Works in 1919. He was appointed Assistant District Locomotive Running Superintendent at Brighton in 1923, Assistant to the Eastern Divisional Locomotive Running Superintendent at Waterloo in 1925, and in 1928 went to the Isle of Wight as Assistant to the Chief Mechanical Engineer & Locomotive Running Superintendent, Southern Railway. In 1930 he was appointed Assistant for the Isle of Wight, and was responsible also to the Divisional Operating Superintendent and Divisional Commercial Manager. In 1934 he became Assistant Western Divisional Locomotive Running Superintendent at Waterloo, and, in 1936, Assistant to the Locomotive Running Superintendent. In January, 1938, Mr. MacLeod was made Assistant to the Stores Superintendent; he was appointed Assistant Stores Superintendent on April 1 of that year, and Stores Superintendent in September, 1945.

Mr. Norman Quail, M.C., who was recently appointed Secretary for Railways, State of Victoria, has had experience in several branches of the Railways Department, graduating through a number of senior staff positions to become Chairman of the Staff Board in 1947. He saw active service in the 1914-18 war.

Mr. Amadeo V. Gnes, who has been appointed Chief of the Way & Works Department, Ferrocarril Nacional General Bartolome Mitre (former Central Argentine Railway), studied at the Universities of Padua and Bologna (Italy), before entering the service of the Central Argentine Railway in 1925 as a surveyor in the Rosario District. Shortly afterwards he was placed in charge of the railway port facilities and defence works on the River Parana in the city of Rosario de Santa Fe. In 1943 Mr. Gnes was in charge of the



Mr. A. B. MacLeod

Appointed Stores Superintendent, London Midland Region, British Railways



Mr. Norman Quail

Appointed Secretary for Railways, State of Victoria



Mr. A. V. Cnes

Appointed Chief of Way & Works Department, General Mitre Railway

survey and final location of the Burruyacu to Morenillo branch, and later returned to the Rosario District as Assistant to the District Engineer. In 1947 he was appointed Chief Assistant to the District Engineer in Rosario, and was nominated by the National Government as a member of the committee dealing with the final planning of the railway access to the city of Rosario de Santa Fe.

Mr. A. M. Newbold, O.B.E., General Agent of British Railways in France, whose death in Paris, at the age of 52, we recorded briefly last week, was educated at St. Olaves and St. Saviours Grammar School, London, and joined the South Eastern & Chatham Railway in 1912 as a clerk in the Audit Accountant's Office, shortly afterwards transferring to the Office of the Superintendent of the Line. After serving with H.M. Forces from 1915 to 1919, he was attached to the Boulogne and Dunkirk Offices in connection with war

material traffic through the port of Richborough, and in 1920 was transferred to Brussels, where he was made Assistant General Agent in 1929. In 1935 he was appointed General Agent for Belgium, with jurisdiction in Holland and Luxembourg, and in 1938 was appointed General Agent in Paris, to undertake the representation of the British railways in France. In 1940 Mr. Newbold assisted in the work of evacuating the port of St. Malo, leaving there with the Agent and other members of the staff on the last Southern Railway boat to leave France. He was a Chevalier of the Order of the Crown of Belgium, and in the New Year Honours, 1949, was awarded the O.B.E.

MR. A. M. NEWBOLD—AN APPRECIATION

The following appreciation appeared in a recent issue of *The Times*:—

Newbold was as efficient as he was charming, as cheerful as courageous. In 1940 he stayed at his Paris desk with Clem

Durrant, his gallant Anglo-French assistant (who was with him when he died) until the Germans were outside the city; then he escaped with his Belgian wife to the south, tragically became separated from her, and reached home alone, to be re-united happily some years later when she finally escaped through Spain and Portugal to England. He was one of the first to return to Paris after the war to re-open the office in the Boulevard de la Madeleine, and since the war his reputation and his popularity had reached a height certainly not dreamed of by any predecessor. He was more than a fine Englishman—he was a fine European who loved his fellow men, and who served Britain and France to the limit of his generous and chivalrous nature.

J. E.

Mr. H. G. Nelson, M.A., A.M.I.C.E., A.M.I.Mech.E., A.M.I.E.E., who has been appointed Deputy Managing Director of The English Electric Co. Ltd., was educated



The late Mr. A. M. Newbold

General Agent in France for British Railways



Mr. H. G. Nelson

Appointed Deputy Managing Director of The English Electric Co. Ltd.



Mr. F. J. J. Prior

Appointed District Engineer, Derby South, London Midland Region

at Oundle, and at Cambridge University, where he was awarded an exhibition, and obtained an honours degree in Mechanical Sciences. Part of his graduate training period was spent in the shops of The English Electric Company, after which he worked in many Continental workshops. On his return to England he joined the staff of The English Electric Company's Preston Works as Superintendent, and eventually became Deputy Manager of those works. At the end of 1942 he was appointed Managing Director of D. Napier & Son Ltd., which was at that time taken over by The English Electric by arrangement with the Ministry of Aircraft Production, and at the same time he joined the board of The English Electric Company. In 1946 the latter company purchased, from Cable & Wireless Limited, Marconi's Wireless Telegraph Co. Ltd., to the board of which Mr. Nelson was elected. On his present appointment Mr. Nelson relinquishes his position as Managing Director of D. Napier & Son Ltd., but will retain his seat on the board of that company.

Mr. F. J. J. Prior, Assistant Divisional Engineer, Plymouth, Western Region, British Railways, who has been appointed District Engineer, Derby South, London Midland Region, joined the Great Western Railway in 1924 in the Chief Engineer's Office at Paddington. In September, 1939, he was Assistant in the Divisional Engineer's Office at Shrewsbury, which he left in 1941 for active service with the Royal Engineers (Supplementary Reserve). In December, 1942, he became Railway Reconstruction Engineer, Manipur Road, Assam, and a year later was Assistant Director of Transportation, Assam. After leaving the Army with the rank of Lt.-Colonel he was posted as Assistant Divisional Engineer, Plymouth, G.W.R.

Mr. W. E. Newton has been appointed London Midland Regional Editor of the *British Railways Magazine*. He joined the L.M.S.R. Press Office staff in 1946 after his demobilisation from the King's African Rifles with the rank of Captain. He has latterly been Acting Editor of *Carry On*.

The following appointments are announced by the Westinghouse Brake & Signal Co. Ltd., as from January 1:—Mr. R. J. Hogben, Brake Sales Engineer, to be Assistant Sales Manager; Mr. F. G. Hathaway, Signal Engineer, to be Deputy Chief Signal Engineer; and Mr. H. F. Phillipson, to be Brake Sales Engineer.

Mr. H. Currington, Transport Manager of the Sheepbridge Co. Ltd., retires tomorrow (December 31) after 45 years' service. After the passing of the Railways Act, 1921, he was appointed Transport Consultant to the Midland Counties Colliery Owners' Association and to the South Yorkshire Coal Trade Association. He was a member of the Transport Committees of the Mining Association and the Federation of British Industries, a founder member of the Traders' Co-ordinating Committee on Transport, the Traders' Co-ordinating Committee on Docks, and the Joint Standing Committee of the Mining Association and the railway companies dealing with questions of transport affecting the coal industry. He was for nineteen years Chairman of the Traders' Traffic Conference. Mr. Currington served on the departmental committee set up by the Minister of Transport in 1921 to consider the desirability of granting powers to the railway companies to carry goods traffic by road.

System of Tunnelling for Copenhagen Underground

Expert opinion divided on the adoption of tube or cut-and-cover construction

In our issue of August 23, 1946, and on other occasions, we have referred to the proposed underground railways across central area Copenhagen. The planning of these lines is one of the tasks of a special "Traffic Committee," which includes representatives of the Danish State Railways and municipal departments. One of its first activities was the organisation of an extensive "origin and destination" travel survey to determine the size and directions of peak hour traffic flows.

Opinions are still divided both on the alignment of the routes and on the method of construction. The State Railways have proposed two lines. One would run generally north-west to south-east, following the busy thoroughfares of Norrebrogade and Kobmagergade, crossing underneath the harbour and continuing some distance below Amagerbrogade, the main street on the island of Amager south-east of the harbour. A second line would form an underground extension of an existing surface railway beyond the present terminus at Frederiksberg under Vesterbrogade, Central Station, Town Hall Square and Stroget (the main thoroughfare in the old city) to Kongens Nytorv, with the possibility of a later extension in a northerly direction. The two lines would cross at right angles at Amagerbrogade, in the centre of the old city.

The city authorities prefer a cheaper scheme whereby the two lines converge in the Frederiksberg area and only one line penetrates the old city. Common to both proposals is the crossing of the harbour to Amager which will bring much-needed relief to road traffic now using the two swing bridges. This particular part of the tunnel must be built as a tube tunnel, cut into the limestone stratum below the glacial moraine, but there is considerable doubt whether the remainder of the line or lines should also be constructed in deep-level tube tunnels or as sub-surface cut-and-cover tunnels.

Cut-and-cover was favoured by the State Railways which were anxious to bring passengers as close as possible to the street and to avoid the risks of tunnel construction in a soil about which comparatively little was known. The local authorities, more anxious to avoid undue interference with street traffic and property, favour tube construction, and point out that the section under the harbour must be a low-level tunnel in any event.

The available geological data were collected and supplemented by test borings along the proposed routes. An important guide to the geological conditions likely to be encountered was the construction, during the war, of a submarine tunnel 2½ miles long to serve as main outfall sewer for the northern part of Greater Copenhagen. This tunnel was to be cut through the submarine limestone throughout its length, but on one section the limestone was found to be so badly fissured that water broke into the tunnel, and a pipeline resting on the bed of the sea had to be substituted on this section.

The test borings for that tunnel and the more recent test borings for the underground railway tunnels were described in two papers read in March, 1949, at a

meeting of the Danish Institute of Civil Engineers by Messrs. O. Forchhammer, Chief Engineer of the City of Copenhagen, and Thorning Christensen, Chief Engineer of the Danish State Railways. The two papers were published in our Danish contemporary, *Ingeniøren* for October 15 last.

The borings, some of which were carried to considerable depths, have revealed surprises. For instance, the upper limit of the reliable limestone stratum was found to show considerable irregularities. At some places, notably near the Town Hall Square, deep localised depressions which Mr. Christensen considered would present unpleasant surprises during the construction of tube-type tunnels, were encountered. As it is intended to use rolling stock of main line dimensions, and as the tunnel would have to be lined with concrete, the cross-sectional area requiring to be cut out of the limestone for a single-track tunnel would amount to as much as 380-430 sq. ft.

In view of the test results, Mr. Christensen thinks that it will be difficult to find, along the routes concerned, adequate limestone at a reasonable depth to accommodate the two large tunnels. This opinion is not shared by Mr. Forchhammer, and a final decision on the question of tube versus cut-and-cover tunnels now rests with the traffic committee.

Maps of existing and proposed lines in and around Copenhagen appeared in our issues of August 23, 1946, and February 27, 1948.

KEITH-BLACKMAN'S EXHIBITS AT THE ENGINEERING CENTRE.—A stand featuring some of the products of Keith-Blackman Limited, Tottenham, London, N.17, has been arranged at the Engineering Centre, Sauchiehall Street, Glasgow. The exhibits include a model of a new T.1100 dust exhausting & collecting unit, fans of various types, sections of heater headers and tubes for air heaters, and a selection of industrial gas equipment.

JOINT DEBATE AT DARLINGTON.—On Tuesday, December 13, a debate took place at the North Road Institute, Darlington, between speakers representing the Railway Students' Association of Edinburgh and the North Eastern Region Federation of Railway Lecture & Debating Societies. Mr. E. W. Arkle, Commercial Superintendent, North Eastern Region, who is Chairman of the Federation Committee, was in the Chair. The debate was on the motion that "Greater delegation of powers to district officers would result in improved facilities to the public," and the speakers in favour of the motion were Mr. Miles Herbert, Operating Superintendent's Office, Edinburgh, and Mr. David Ferguson, District Motive Power Superintendent's Office, Burntisland, representing the Edinburgh Association. Opposing the motion were Mr. F. T. Gray, Assistant Commercial Superintendent (Cartage & Terminals) and Mr. S. Waugh, Deputy Chief Controller in the Central Control at York, representing the North Eastern Region Federation. A spirited debate from the hall followed and on the call for a vote by Mr. Arkle, the motion was carried by a substantial majority.

British Transport Commission Statistics

Summary of the principal statistics for
the four-week period ended November 6*

The decline from the preceding period in British Railways' receipts was mainly in passenger traffic; general merchandise, mineral, and coal and coke receipts increased slightly. All traffics, however,

except cartage and livestock decreased from the corresponding period last year; this is surprising in the case of minerals and coal, in view of increased steel and coal production. The sharp decline from

September in shipping receipts was due mainly to the suspension of cross-Channel and Clyde summer services; compared with 1948 the decrease is slight, and mainly in steamer passengers. Road haulage receipts rose some 10 per cent. over the preceding period. Dock, harbour, and wharf receipts decreased seasonally, but were substantially more than last year under all three headings of dues, wharfage, and other receipts. London Transport

STAFF

	Commission's Head Office	British Railways	London Transport	British Road Services (Road Haulage)	Road Passenger (Provincial and Scottish)	Hotels & Catering	Ships, Vessels & Marine	Docks, Harbours, Wharves, and Inland Waterways	Railway Clearing House	Common Services: Commercial Adver- tisement	Total
No. of employees	223	629,082	100,179	62,823	55,935	16,659	5,827	24,771	662	151	896,312
Inc. or dec.	-2	-3,064	-102	-322	-641	-386	-30	-210	-3	-2	-4,054

1. BRITISH TRANSPORT COMMISSION RECEIPTS

	Four weeks		Inc. or dec.	Aggregate for forty-four weeks		Inc. or dec.
	To Nov. 6, 1949	To Oct. 31, 1948		1949	1948	
	£000	£000		£000	£000	
British Railways—						
Passengers ...	7,250	7,929	- 679	99,400	107,075	- 7,675
Parcels, etc., by passenger train ...	2,272	2,274	- 2	24,485	24,767	- 282
Merchandise ...	6,175	6,705	- 530	67,891	70,307	- 2,416
Minerals ...	2,385	2,498	- 113	24,855	24,201	- 654
Coal & coke ...	5,441	5,596	- 155	57,199	55,099	- 2,100
Livestock ...	224	222	- 2	1,203	1,062	- 141
	23,747	25,224	- 1,477	275,033	282,511	- 7,478
British Railways—						
C. & D. and other road services ...	700	676	- 24	7,316	7,305	- 11
Ships and Vessels ...	607	672	- 65	9,428	8,574	- 854
London Transport—						
Railways ...	1,097	1,141	- 44	12,127	12,308	- 181
Buses & coaches ...	2,364	2,457	- 93	26,706	26,860	- 154
Trams & trolleybuses ...	839	880	- 41	9,280	9,533	- 253
	4,300	4,478	- 178	48,113	48,701	- 588
British Road Services—						
Freight charges, etc. ...	4,137	-	-	28,800	-	-
Road Passenger Transport ...	2,471	2,489	- 18	30,527	29,834	- 693
Docks, Harbours & Wharves ...	888	842	- 46	9,298	8,614	- 684
Inland Waterways ...	114	115	- 1	1,291	1,140	- 151
Hotels & Catering ...	1,011	1,042	- 31	11,315	11,307	- 8

receipts were slightly less both seasonally and absolutely in all forms of transport.

British Railways' passenger journeys in September declined by 6 per cent. from August, but were still slightly over the 1948 figure, with increases of 100 per cent. and over in reduced fare traffic of various kinds in the London Midland, Eastern, and Scottish Regions. The proportion of second class journeys, now confined to certain Continental boat trains, rose by 20 per cent. compared with the previous year.

Tonnage originating rose slightly from the preceding period, mainly of coal in the Western, North Eastern, and Scottish Regions, due to increased output, which was also reflected in a 2.2 per cent. rise over last year's corresponding coal tonnage for all Regions. Mineral traffic, however, did not maintain its improvement shown in the preceding period.

Freight train speed again fell, from 8.4 m.p.h. in the previous period, to 8.2, but was still higher than last year. The average wagon load at starting point improved slightly. Coal consumption rose seasonally, to 62.2 lb. per engine mile. The rolling stock position remained much the same; the availability of operating stock showed little change from over last year due to extensive replacements.

* British Transport Commission Statistics, 1949. Series No. 11. Period to November 6. London: British Transport Commission. Price 1s.

2. BRITISH RAILWAYS

(A) Passenger Journeys Originating in the Month of September

		Region												Total	
		London Midland		Western		Southern		Eastern		North Eastern		Scottish			
		000	Per cent.	000	Per cent.	000	Per cent.	000	Per cent.	000	Per cent.	000	Per cent.	000	Per cent.
Ordinary fares	...	995	-22.6	667	-12.4	2,084	-3.5	900	-11.2	138	-26.4	253	36.3	5,037	-13.2
Monthly returns	...	3,975	-17.5	1,759	-8.0	6,670	-10.1	3,002	-19.5	417	-18.3	969	-11.3	16,792	-13.8
Excursion, weekend, cheap day, etc.	...	5,670	-100.0	2,311	-28.8	4,315	-42.9	2,444	-103.8	1,356	-87.1	1,716	-118.6	17,812	-72.0
Workmen	...	5,476	-0.6	1,691	-9.3	6,326	-10.9	3,295	-4.8	845	-6.2	85	-6.0	18,490	-2.2
Other descriptions	...	1,126	-7.8	770	-14.0	1,358	-5.3	637	-13.5	279	-6.1	327	-17.4	4,497	-9.7
Season tickets	...	8,297	-3.6	5,263	-1.0	15,354	-4.4	5,129	-4.1	2,211	-12.2	2,321	-15.3	38,575	-5.0
Total	...	25,539	-5.2	12,461	-0.7	36,107	-0.7	15,407	-0.5	5,246	-2.1	6,443	-1.9	101,203	-1.1

(B) Freight Tonnage Originating

(2) Freight Volume - Engineering															
Region														Total	
London Midland		Western		Southern		Eastern		North Eastern		Scottish					
	000	Per cent.	000	Per cent.	000	Per cent.	000	Per cent.	000	Per cent.	000	Per cent.	000	Per cent.	
Merchandise ...	1,361	-2.8	745	-9.9	264	-17.3	640	-5.6	563	-6.7	601	-7.1	4,174	-6.7	
Minerals ...	1,565	-4.1	712	-0.1	124	-16.6	850	-2.4	907	-1.6	681	-2.3	4,839	-2.3	
Coal & coke ...	4,338	-3.6	2,245	-9.8	268	-0.1	2,182	-3.1	2,662	-6.4	1,646	-1.3	13,341	-2.2	
Livestock ...	30	-3.6	23	-5.8	5	-16.9	6	-17.2	14	-11.3	44	-19.5	122	-12.4	
Total ...	7,294	-3.5	3,725	-3.2	661	-10.9	3,678	-0.2	4,146	-2.5	2,972	-0.7	22,476	-0.6	

(C) Net Ton Miles

	Region												Total	
	London Midland		Western		Southern		Eastern		North Eastern		Scottish			
	000	Per cent.	000	Per cent.	000	Per cent.	000	Per cent.	000	Per cent.	000	Per cent.	000	Per cent.
Merchandise & livestock ...	200,015	-4.7	100,387	-5.3	24,784	-11.7	85,313	-6.7	55,639	-8.1	83,691	-7.0	549,829	-4.7
Minerals ...	141,161	+7.0	78,638	-2.2	15,840	-8.8	95,297	-9.9	32,745	-7.6	41,705	-3.2	405,386	-1.2
Coal & coke ...	299,629	-4.1	140,536	-9.5	29,643	-4.8	180,807	-5.4	68,996	-3.7	68,115	-3.1	787,726	-1.3
Total, all classes of traffic...	640,805	-2.1	319,561	-2.7	70,267	-4.7	361,417	-6.9	157,380	-0.7	193,511	-2.8	1,742,941	-2.4

(D) Train Miles

	Region												Total	
	London Midland		Western		Southern		Eastern		North Eastern		Scottish			
	000	Per cent.	000	Per cent.	000	Per cent.	000	Per cent.	000	Per cent.	000	Per cent.	000	Per cent.
Coaching train miles—														
Steam—														
Loaded	4,123	—0.9	3,011	—4.7	1,473	—0.5	2,566	—1.8	995	—1.1	1,717	—1.6	13,885	+1.1
Empty	128	—5.7	134	—8.3	45	—4.5	97	—9.7	38	—3.8	55	—6.8	497	+5.4
Total loaded & empty ...	4,251	—0.7	3,145	—4.9	1,518	—0.6	2,663	—2.0	1,033	—1.2	1,772	—1.7	14,382	+1.2
Electric—														
Loaded	437	+2.7	—	—	2,950	—0.2	52	—148.2	92	Nil	—	—	3,531	+1.4
Empty	19	—2.4	—	—	63	—0.4	5	209.0	9	—4.6	—	—	96	+2.9
Total loaded & empty ...	456	+2.5	—	—	3,013	—0.2	57	—153.2	101	—0.4	—	—	3,627	+1.4
Freight train miles—														
Loaded	3,073	—2.5	1,772	—6.8	539	—1.9	1,769	—2.6	941	—0.7	1,439	—2.9	9,533	—0.6
Empty	546	—2.0	211	—7.3	17	—51.5	381	—11.5	216	—2.3	202	—4.5	1,573	+2.2
Total loaded & empty ...	3,619	—2.5	1,983	—6.9	556	—0.8	2,150	—0.4	1,157	—0.1	1,641	—3.1	11,106	—0.2
Total train miles	8,326	—1.3	5,128	—5.7	5,087	—0.2	4,870	—1.7	2,291	—0.5	3,413	—0.6	29,115	+0.7

(E) Freight Train Miles per Train Engine Hour

Region														Total	
London Midland		Western		Southern		Eastern		North Eastern		Scottish					
1949	1948	1949	1948	1949	1948	1949	1948	1949	1948	1949	1948	1949	1948	1949	1948
7.01	6.98	9.00	9.09	8.67	8.68	8.15	7.94	9.99	9.76	9.69	9.39	8.23	8.12		

(F) Locomotive Coal Consumption

	Region												Total	
	London Midland		Western		Southern		Eastern		North Eastern		Scottish			
Tonnage consumed (000s)	349	Per cent.	178	Per cent.	78	Per cent.	201	Per cent.	91	Per cent.	166	Per cent.	1,063	Per cent.
Lb. per engine mile ...	64.4	-1.7 -0.9	52.3	+2.6 -1.6	58.1	-1.4 -5.2	64.2	-4.0 -2.8	62.0	-1.2 nil	71.2	-7.4 -5.0	62.2	-2.2 -1.7

(G) Rolling Stock Position

	Operating stock	Number under repair	Available operating stock	Serviceable stock in 1948
Locomotives ...	19,938	3,613	15,805	16,019
Coaching vehicles ...	56,160	5,639	50,521	49,529
Freight wagons ...	1,121,367	112,897	1,008,470	1,047,940

3. INLAND WATERWAYS
Tonnage of traffic and ton miles

	Tonnage	Per cent.	Ton miles	Per cent.
General merchandise ...	325	-2.0	5,022	-17.1
Liquids in bulk ...	132	-6.6	3,321	nil
Coal, coke, patent fuel & peat	436	-1.0	7,015	+7.2
Total ...	893	-2.3	15,358	-3.5

4. LONDON TRANSPORT

(A) Passenger Journeys Originating

	Number	Per cent.
Railways ...	50,442	-1.4
Buses & coaches ...	211,330	-1.6
Trams & trolleybuses ...	91,141	-3.2
Total ...	352,913	-2.0

(B) Rail and Road Car Miles

	Miles	Per cent.
Railways ...	18,007	+1.1
Buses & coaches ...	23,870	-1.7
Trams & trolleybuses ...	8,601	-2.1
Total ...	50,478	-0.8

Hunslet Locomotive Orders

During 1949 the Hunslet Engine Co. Ltd. turned out of the Jack Lane works a large number of locomotives, steam and diesel, and the order book also records a full inflow of both types for Great Britain, India, Ceylon, Borneo, Canada, South Africa, Rhodesia, Tanganyika, Nigeria, Ashanti, Cameroons, France, Algeria, Sudan, and Peru.

Among steam locomotives, special types for onerous duties have been well represented by a 2-8-2 locomotive of 13,420 lb. tractive effort and a 6½-ton axle load for a heavily-graded 2 ft. gauge line in South Africa; by three main-line freight 2-8-2 engines of 15,210 lb. tractive effort for the Barsi Railway in India; and by the beginning of delivery of six 5 ft. 6 in. gauge 65-ton 0-6-2 tank engines for the Calcutta Port Commissioners. The last-named engines are the second order for six, and another six locomotives were ordered during the course of the year. A further order was for ten 0-6-0T shunting locomotives for the 3 ft. 6 in. gauge lines of the Sudan Railways.

The Calcutta 0-6-2 tank engine is a design evolved by Hunslet to haul 1,200-ton trains of bogie and four-wheel wagons round the dock curves, but with a maximum axle load limited to 16½ tons. Starting tractive effort is 21,000 lb. and the boiler pressure 210 lb.

For the heavy shunting work in Great Britain the 48½-ton austerity tank loco-

motive with a tractive effort of 21,060 lb. retains its popularity. More than 400 of these have now been constructed.

DIESEL LOCOMOTIVES

Technical interest in diesel work centred on the construction of 300-h.p. and 500-h.p. straight diesel locomotives for heavy shunting and line service, but deliveries of the standard 204 b.h.p. diesel locomotive of from 27½ to 31½ tons weight were most numerous, buyers including railways, steelworks, docks and general industrial users. The Algerian Railways have acquired ten of this type over the past 14 or 15 months and the Tanganyika section of the East African Railways & Harbours is now taking delivery of three for shunting and light train haulage. Other buyers of these locomotives included John Summers & Co. Ltd. and the Consett Iron-works Limited.

Orders received also include another four from the Algerian Railways, four from South Africa, and others from the United Kingdom, and still more locomotives of higher power for steel and mining organisations in Lancashire, Durham, and Rhodesia.

Flameproof mines diesel locomotives for underground service continued to form an appreciable proportion of the business, and the N.C.B. is now in possession of over 160 Hunslet machines of from 24 to 100 h.p., while others have been delivered to Canada, India, South Africa, and West Africa.

Dissolution of Railway and Canal Companies

The following notification appears in *The London Gazette* of December 23, 1949, the certificate being dated December 20, and signed by Mr. J. Cowen, an Assistant Secretary of the Board of Trade:—

Pursuant to Section 24 (1) of the Transport Act, 1947, the Board of Trade has issued the following certificate.

Whereas the Board of Trade is satisfied in relation to each of the bodies specified in the schedule hereto:—

(1) That the body has, in accordance with sections 12 to 23 inclusive of the Transport Act, 1947, collected and distributed any moneys receivable by them in respect of any agreement disclaimed by the British Transport Commission (including the appropriate proportion of any moneys received by any joint committee or joint body from any person in respect of any agreement of that joint committee or joint body which is disclaimed by the said Commission);

(2) that the body has distributed any moneys paid to it by the said Commission;

(3) that the body has complied with any directions given to it by the said Commission for the purpose of securing that the ownership of any property or any right is effectively transferred to the Commission; and

(4) that the said Commission does not

houses and factories travel by train

lines that lead to Britain's food tables

For the construction of Britain's new homes and factories, British Railways carry over 20 million tons of building materials a year. Facilities include:

- Bricks delivered and stacked on site
- Special trailers for delivery of reinforcing rods
- Conveyance of cement in bags or bulk
- Expert handling of heavy loads
- A complete transport service for everything from drains to roof

You can build business with the help of British Railways' service. Firms throughout the country are finding that rail transport meets their needs ideally. Your local Goods Agent will gladly explain how YOUR firm can profit by using the Railways

Annually, British Railways carry more than 10 million tons of food to feed Britain. Among the reasons why so many food producers prefer rail transport are these special facilities:

- Express freight trains
- Nation-wide delivery services
- Warehousing for bulk storage and retail distribution
- Refrigerated vehicles where needed
- Tank vehicles for milk

If you have goods for transport it will pay you to learn how British Railways can meet your requirements. Your local Goods Agent will, on request, gladly call on you to give you full details.

BRITISH RAILWAYS

goods service is a good service

BRITISH RAILWAYS

goods service is a good service

Two advertisements issued by British Railways in recent weeks which emphasise the advantages of the railway goods service (see editorial article on page 755)

desire to give any further such directions. Now therefore the Board of Trade pursuant to section 24 (1) of the Transport Act, 1947, hereby certifies that there is no reason for the continued existence of each or any of the said bodies.

Schedule

The Great Western Railway Company.
The London Passenger Transport Board.
The Kent & East Sussex Light Railway Company.
The Shropshire & Montgomeryshire Light Railway Company.
The Company of Proprietors of the Calder & Hebble Navigation.
The Sharpness Docks and Gloucester & Birmingham Navigation Company.
The Company of Proprietors of the Stour-bridge Navigation.
The London & North Eastern Railway Company.
The Oxford Canal Company.
The London Midland & Scottish Railway Company.

Further reference to the above is made in an editorial article on page 755 of this issue; the schedule of the companies dissolved simultaneously with the Southern Railway Company was given on page 677 of our June 17 issue.

Questions in Parliament

Repainting of Trains

Lord Lyle of Westbourne in the House of Lords on December 14 asked His Majesty's Government whether, in view of the desirability of curtailing expenditure at the present time, any directions were to be issued to the Railway Executive with regard to its programme for repainting trains in new colours.

Lord MacDonald of Gwaenysgor (Paymaster-General), who replied, said: This is a matter for the British Transport Commission. I have referred it to the Commission, and it will no doubt get in touch with Lord Lyle.

Railway Accidents

Mr. L. D. Gammans (Hornsey—C.) on December 13 asked the Minister of Transport if he would make a statement on the number of minor railway accidents which had happened lately.

Mr. James Callaghan (Parliamentary Secretary, Ministry of Transport), in a written answer, stated: There has been no recent increase in the number of railway accidents, but those reported to the Minister of Transport during the last two months include a number of comparatively minor cases which have received some publicity; five of them are under formal inquiry by the inspecting officers of my department. It will be appreciated that the Minister cannot anticipate their findings, but their reports will be published in due course.

Railway Superannuation Schemes

Lt.-Colonel W. H. Bromley-Davenport (Knutsford—C.) on December 12 asked the Minister of Transport whether, in view of the rise in the cost of living following devaluation, he would give further consideration to the appeal of the British Railways Superannuitants' Federation for supplementary allowances.

Mr. Alfred Barnes, in a written answer, stated: As I have informed the House on previous occasions, the superannuation schemes to which the question refers are not solvent, and already approximately £2½ million per year is required to meet the deficit. For this reason I have pre-

viously refused to intervene in the matter. The statement I made in the House on November 28 about the finances of the British Transport Commission indicates that it would not be justifiable to impose an additional burden on them by providing supplementary allowances to existing pensions.

Displaced Canal Companies' Officers

Mr. F. Beswick (Uxbridge—Lab.) on December 12 asked the Minister of Transport if he was now able to make the regulations provided for under section 101 of the Transport Act, 1947, dealing with compensation for former canal companies' officers who had been displaced by the Transport Commission.

Mr. Alfred Barnes, in a written answer, stated: I have already made regulations covering officers and servants of canal undertakings transferred to the Commission. There are also a number of bodies which were completely controlled by the various canal undertakings transferred to the Commission under the Act, for which I am required by sub-section (1) (d) of section 101 to make regulations providing for compensation. These regulations are in preparation and will be laid before the House as soon as possible.

Rolling Stock for Argentina

Sir Arnold Gridley (Stockport—C.) on December 13 asked the President of the Board of Trade what had been the amount of the recent transfer made by the Argentine Government in part discharge of payments due for railway locomotives and other rolling stock, and so on; and whether such sum had been transferred without exchange loss.

Mr. A. G. Bottomley (Secretary to the Overseas Trade Department) stated in a written answer: I regret that the payment of a more substantial sum against these arrears which was recently promised by the Argentine Government has not yet been made. As the contracts in question are expressed in sterling, no question of exchange loss would arise. As I informed Sir Arnold Gridley on November 15, the many important issues, including this one, which have arisen under the Anglo-Argentine Trade Agreement are now being discussed with the Argentine Government.

BRITISH STANDARD FOR PRESS TOOL SETS.

—The section of the engineering industry using presses for mass-production purposes will be interested in the new British Standard for press tool sets (B.S. 1609: 1949), compiled to meet the need for standardised tooling equipment for hand and power operated presses. The standard deals with materials and dimensions of press tool sets for use with presses up to about 80 tons capacity. Copies can be obtained from the British Standards Institution, Sales Department, 24, Victoria Street, London, S.W.1, price 10s. 6d.

G.E.C. MODEL ENGINEERING EXHIBITION.

—The first post-war exhibition of the G.E.C. Model Engineering & Electronic Society was held at Magnet House, Kingsway, on November 24 and 25. The exhibits, which attained a high standard of craftsmanship, covered a great variety of subjects, and included model aircraft, an air-sea rescue launch, a Clyde drifter, and locomotives of various types. Mr. T. W. Heather, a director of the General Electric Co. Ltd., presented the prizes. The trophy for the best model in the locomotive section was won by Mr. H. H. Mills.

Notes and News

Designer Draughtsman Required.—A designer draughtsman and technical assistant to managing director is required in a London office. See Official Notices on page 779.

Railway Representative Required.—A railway representative to be based in London is required by an anti-friction material manufacturer to cover sales in the United Kingdom. See Official Notices on page 779.

British Railways Coal Traffic.—During the week ended December 18, the number of wagons of coal forwarded by British Railways was a post-war record and amounted to 343,862; figures for the previous weeks were 334,619, to December 4, and 335,616, to December 11.

Passenger-Operated Doors on the Bakerloo Line.—Passenger-operated doors, already in use on the Central Line of London Transport, are now being introduced on the Bakerloo Line. The first train fitted with the system has already gone into service and all Bakerloo trains will be similarly equipped by the end of January. Passenger-opening will be limited to stations on open sections, i.e., north of Queens Park and Finchley Road, and the usual "press to open" notices are being displayed on the car doors.

Institute of Transport.—A paper on "The Commercial Vehicle Tyre and its Contribution to Road Transport," by Mr. H. Shankland, formerly Director of National Sales, Dunlop Rubber Co. Ltd., was delivered at the Institute of Transport fifth Henry Spurrier Memorial Lecture on December 12. The meeting was held at the Jarvis Hall (R.I.B.A.), London, W.1, with Brigadier-General Sir H. Osborne Mance, President of the Institute, in the Chair; due to the illness of the author, however, the paper was read by Mr. W. A. Moens.

San Paulo (Brazilian) Railway Co. Ltd.—Accounts for the year ended December 31, 1948, show a loss incurred in Brazil of £234,772 (£321,477 in 1947), to which were added administration expenses in England, £26,586 (£24,562). After crediting interest on "recognised capital" of £340,753 (£528,839), buying commission, £22,258 (£48,580), and appreciation in exchange, nil (£24,461), there was a balance carried to net revenue account of £101,932 (£256,681). To this was added sundry items, and £300,000 (nil) from general reserve, making £434,195 (£331,681). Payment of debenture interest and preference dividend left £195,934 to go forward, as against £21,230 brought forward from last year.

Heenan & Froude.—At the annual general meeting of Heenan & Froude Limited on December 19, the Chairman, Mr. Alan P. Good, said that orders continued to flow in. Foreign competition and import restrictions had increased, but the outlook for sales was good, given reasonable world trading conditions. The progress of the holding company had been maintained. The engine test-plant section continued to supply most of the test-plant requirements of the British aircraft, automobile, and diesel engine builders in Britain. The municipal engineering division had received substantial orders. The Gloucester works of their subsidiary company, Fielding & Platt, had been fully engaged, including in their

output heavy hydraulic press equipment, bent plate for shipbuilding, and oilfield equipment. Both Court Works Limited and Industrial Waste Eliminators Limited had had a good year.

Conference on Rubber in Engineering.

The London Section of the Institution of the Rubber Industry, 12, Whitehall, London, S.W.1, is organising a one-day conference on the behaviour and testing of rubber under dynamic conditions. This will be held in London on March 17. Arrangements have already been completed for six papers to be presented. It is planned to publish the proceedings of the conference in a special issue of the Transactions of the Institution.

Scottish Society of Students of the Locomotive.—At a general meeting of the Scottish Society of Students of the Locomotive, held on Friday, December 2, in the boardroom, Scottish Regional Headquarters, the Chair was occupied by Mr. William Robertson, and after other business had been concluded, the Chairman invited Mr. M. Smith to read his paper on "Locomotive Superheating." A description was given of various types of superheaters, and the historical side was dealt with in detail, a large number of drawings and diagrams supplementing the speaker's remarks.

Broadcast on Railway Schools.—In its programme "News from the North," on December 7, the B.B.C. gave a descriptive account of the two North Eastern Region residential schools, Grantly and Faverdale, at Darlington. It was reported that the present course at Grantly, the operating school, was the fiftieth since its opening in 1944, and after visiting both of the schools Mr. Kevin McGarry gave a description of their work. An abstract of a paper to the Railway Students' Association on the organisation of the Faverdale commercial school, by Mr. H. F. Sanderson, Principal of Faverdale Hall, appeared in our December 24, 1948, issue.

Barsi Light Railway Co. Ltd.—At the annual general meeting on December 14, the Chairman, Sir Ernest Bell, said that the number of passenger journeys was 3,750,000, or three times the pre-war figure, and goods tonnage had much increased. While, however, gross earnings were Rs. 44,98,500, as opposed to Rs. 18,54,600 in 1938-39, the percentage of working expenses had risen from 57 to 78, due largely to the adoption of Government of India rates of pay. The report and accounts were adopted; it was decided to transfer £10,000 to the reserve for renewals, and to carry forward a balance of £20,664, after maintaining the ordinary dividend at 6½ per cent.

International Mechanical Engineering Congress.

The organising committee which met in London recently decided to hold the 1950 congress in Brussels. The Fédération des Entreprises de l'Industrie des Fabrications Métalliques will act as host. Presiding at a luncheon in honour of the committee, Mr. C. K. F. Hague, President of the British Engineers Association, said that the most important aspect of the congress was that it provided an opportunity for practical men engaged in the manufacture and sale of engineering products to meet for discussion freely among themselves, rather than through Governmental channels. Mr. Jean Constant, Director-General of the Syndicat Général des Industries Mécaniques et Transformatrices des Métaux, said that freedom of the rate of exchange

from Government control throughout Europe would help to build up a strong European market. Reference to the 1949 Congress, held in Paris, was made in our August 26 issue.

Convention on Electric Railway Traction.

Further to the report in our December 23 issue, we are informed that the paper in Session 2, "Review of Electric Traction in France" by Monsieur R. Dugas, French National Railways, will not be given.

Western Region First Aid Awards.

Mr. A. W. Woodbridge, Signal & Telegraph Engineer, Western Region, British Railways, presided at the Reading First Aid Class annual presentation and social evening recently, and was supported, among others, by Mr. Gilbert Matthews, Operating Superintendent, Mr. R. Burgoyne, Regional Staff Officer, Mr. C. W. Powell, London Divisional Superintendent, Dr. C. T. Newnham, Medical Officer, and Mr. P. Anstey, Regional Ambulance Secretary. The awards, including a large number of long-service efficiency medals and bars, were presented to members of the Reading class by Mr. Matthews and to members of the Pangbourne class by Mr. Powell.

East Yorkshire Motor Services.

At the annual general meeting on December 15, Mr. J. S. Willis, Chairman of East Yorkshire Motor Services Limited, said that the company had had a record year. Since the war, passenger-journeys had increased 50 per cent., and were now twice the pre-war figures; against this, wage increases, and rises in the cost of fuel and so on had added to operating expenses. Although they were not included in the Northern Area nationalisation scheme the threat remained. Views of the consultative councils to be set up could be disregarded by the Area Board. The reason for this disruption of a most efficient industry was the wish to bolster up declining railway revenues and abolish freedom of choice between road and rail travel.

Transport Tribunal Sittings.

The Court of the Transport Tribunal will sit on the following dates:—January 24, February 21, March 21, April 18, May 23, June 20, July 18, October 17, November 21 and December 19, 1950, to hear applications in connection with the granting of new or reduction of exceptional rates. The Court will sit on the following dates:—January 31, April 25, July 25 and October 24, 1950, to hear applications to determine questions relating to the alteration of the classification of merchandise, and applications as to the reductions to be made from the standard charges where damageable merchandise is carried under owner's risk conditions. Printed copies of the procedure to be followed in any of the applications may be obtained from the Office of the Tribunal, Wellington House, 125-130, Strand, London, W.C.2.

La Guaira & Caracas Railway Co. Ltd.

Net receipts for the year ended December 31, 1948, were £10,704, which, together with £14,553 in respect of interest, dividends, transfer fees, and taxation, allowed £19,137 for 5 per cent. debenture stock interest and £3,016 for provision for redemption of debenture stock. Net profit was £1,549, to which was added a £18,696 balance from 1947, making £20,245 to be carried forward. The Chairman, Mr. Robert Adeane, states that expenses rose as the result of salary and wage obligations imposed by the Venezuelan Government, which had also decided to build a new highway between La Guaira and Caracas.

with a steeper grade. This would considerably reduce the time for road journeys between the coast and the capital and create serious problems for the company. Their rights under the terms of their concession of fixing rates to meet ever increasing expenses and competition were still denied to them. There was no further news concerning the negotiations for the sale of their property.

Rhodesia Railway Commission.

The final report has appeared of the Railway Commission of Southern Rhodesia, Northern Rhodesia, and the Bechuanaland Protectorate covering the ten months ended October 31, 1949. The statutes under which the Commission was appointed were repealed on November 1. Consequent on the State purchase of the Rhodesia Railways, the three Governments concerned agreed that no balance sheet, annual schedule of railway charges, or estimates should be submitted for the period under review, making legal provision, severally, for the indemnification of the Commission and of Rhodesia Railways Limited for the omission to carry out the statute in this respect. The Commission had continued to carry out its statutory duties relating to railway charges which are the subject of the final report.

East Midland Motor Services Limited.

Presiding at the annual general meeting on December 16, Mr. J. W. Womar, Chairman, said that, although they had achieved records in receipts, passenger journeys, and mileage, operating expenses had continued to rise. This was due mainly to wage increases and to devaluation, which had increased the cost of fuel oil and petrol. The company believed in and practised voluntary co-operation with other bus operators. The Standing Joint Committee, comprising representatives of British Railways and the company, continued to do useful work in co-ordinating road and rail services. The Area Scheme for North East England was opposed by operators, by the public, and local authorities operating transport services, and the proposal for a similar scheme in the Eastern Counties would meet with equal opposition.

Brown Bayley's Steel Works Limited.

The consolidated trading profit declined from £706,838 for 1947-48 to £622,638 for the year ended July 31, and net profit, after setting aside £270,823, against £303,266, for taxation from £310,481 to £264,674. Net profit of the parent company was £233,571 (£271,029), out of which £200,000 (£135,000) has been transferred to the fixed assets replacement reserve. After providing for free of tax ordinary dividends totalling 12 per cent. (as last year), the parent company's balance to be carried forward will be reduced from £131,194 to £103,765. The Chairman, Mr. E. H. Armitage, states that application has now been made to the authorities to confine nationalisation to such of the company's assets and liabilities as are related to the activities enumerated in the third schedule of the Iron and Steel Bill. The annual general meeting was held on December 20.

Strike by Southern Region Motormen.

—An unofficial strike of Southern Region motormen working the Western Section electric services from Waterloo Station, disorganised main-line services to Portsmouth and Alton, as well as in the suburban area, on December 26 and 27. The Railway Executive had agreed with the railway trade unions that December 27 was not to be recognised as a bank holi-

OFFICIAL NOTICES

None of the vacancies on this page relates to a man between the ages of 18 and 50, inclusive, or a woman between the ages of 18 and 40, inclusive, unless he, or she, is excepted from the provisions of the Control of Engagement Order, 1947, or the vacancy is for employment excepted from the provisions of that Order.

56,500 GALLON capacity Braithwaite Tank. Size 28 ft. x 28 ft. x 12 ft. high. Internally braced. Complete with domed steel roof. Immediate delivery.—COX & DANKS LIMITED, Scapa House, Park Royal Road, London, N.W.10. Elgar 5811.

TRAFFIC MANAGER required by The Steel Company of Wales Limited, Steel Division, Port Talbot. Previous experience in operating traffic essential. Salary according to qualifications. Apply, stating experience, and salary required, to the Superintendent, Personnel Services, P.O. Box No. 9, Port Talbot, Glam.

DESIGNER DRAUGHTSMAN and Technical Assistant to Manager Director. Experienced in earth-moving plant, conveyors and railway mechanisation. Knowledge of technical French an advantage. London office. £600-£800 p.a.—Box 572, *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

RAILWAY REPRESENTATIVE, to be based on London, is required by large Anti-friction Material Manufacturer to cover technical sales in the U.K. Applicants should have served railway apprenticeship and hold Engineering Diplomas. Salary, dependent upon experience and qualifications, from £500 p.a. Good prospects, pensionable.—Apply Box 568, *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

THE EVOLUTION OF RAILWAYS. Second edition, revised and enlarged. By Charles E. Lee. Traces the germ of railways back to Babylonian times. Cloth. 8½ in. by 5½ in. 72 pp. Illustrated. 6s. By post 6s. 4d. *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

day, and it was to this that the motormen took exception; they were to have received an extra day's holiday only if they worked on Boxing Day. Of 268 motormen, of whom some 45 originally made a complaint, only about 18 reported for duty on Boxing Day and sufficient to man only 24 trains the next day. No London suburban services were operated on the Western Section and only a few trains were run to Portsmouth, whereas a modified Sunday service was to have been maintained, with additional trains on the evening of December 27, for passengers returning from holiday. Normal services were resumed on December 28 and a meeting was held the same day by the management of the Southern Region to discuss the stoppage.

Compagnie Internationale des Wagons-Lits et des Grands Express Européens.—The total number of sleeping cars and restaurant cars is to be increased by 107 coaches now being built in various countries. Of these, 97 will be sleeping cars, including 50 with third class compartments, and there will be ten restaurant cars. According to a recent report the average patronage of vehicles at present considerably exceeds that before the war. As mentioned in *The Railway Gazette* of May 6, 1949, the company closed its 1948 accounts with a net profit of Belg. fr. 197,997,861, or approximately £1,414,280 at the present rate of exchange, which enabled the debt which had accumulated during the war to be wiped out. The balance sheet as at the end of 1948 showed the various reserve funds as totalling fr. 462,000,000. Claims in respect of wartime damages aggregated fr. 314,000,000. Liquid funds exceeded fr. 500,000,000 and realisable assets reached about fr. 1,000 million.

British Institute of Management: Labour Turnover Analysis.—The Institute has now published its labour turnover analysis, based on statistics submitted voluntarily by a number of undertakings for the period January to June, 1949. The analysis covers 187 establishments employing some 310,000 persons (compared with 23,000,000 employed in Great Britain) in the 48 groups and sub-groups of industries as classified by the Ministry of Labour; nationalised transport is not included, and the figures for the transport and communications group cover three establishments. The analysis gives overall labour turnovers for the period of 27 per cent. for men and 42 per cent. for women. Of total leavers, 70 per cent. of men and 83 per cent. of women left voluntarily, the main reasons being personal betterment for 21 per cent. of the men and domestic responsibilities for 16 per cent. of the women. It is not yet possible to produce comparable statistics for the British Transport Commission. Members of the B.I.M.

council elected or re-elected included Sir Charles Renold, Chairman, Sir Clive Baillieu, Vice-Chairman, Sir Charles Bartlett, Mr. G. Chelioti, Sir Herbert Hutchinson, Sir Geoffrey Mander, Mr. A. J. Quig, the Earl of Verulam, and Mr. Harold Whitehead.

International Union of Railways.—The annual meeting of the Management Committee of the International Union of Railways was recently held in Paris. Countries represented by technical delegates included France, Great Britain, Germany, Italy, Austria, Belgium, Denmark, Bulgaria, Hungary, Holland, Portugal, Sweden, and Switzerland. The committee proposed to set up two new departments, one to deal with railway propaganda and advertising on a European scale, and the other with "studies and tests." Proposals to be studied included new coaches with inclined seats; a subscription fund to provide means for international holidays; improvements in timetables and simplified formalities at frontier crossings; and the organisation of cruising trains on international routes of interest to tourists.

Crompton Parkinson Limited.—The Chairman, Mr. Albert Parkinson, stated at the recent annual general meeting of Crompton Parkinson Limited, that their total capital at September 30 was £6,888,439, £383,325 more than last year. Net current assets had increased £80,000, due largely to the stock-in-trade and work in progress figure, which had increased by £433,853. A final dividend of 7½ per cent. was again recommended and also a cash bonus of 7½ per cent. on the ordinary and "A" ordinary stocks. Conditions in the period under review did not differ much from those of the previous year; higher costs had been partly offset by improved techniques. Regarding overseas trading, devaluation had increased the price of certain imported materials, and, therefore, their own selling prices, but it had helped them to compete in overseas markets. They looked forward to expansion of business with Canada and with South America.

Thomas W. Ward Limited.—Presiding at the recent annual general meeting of Thomas W. Ward Limited, whose results were given in our October 28 issue, the Chairman, Mr. Ashley S. Ward, said that good management knew that it was necessary to give encouragement to workers to take a pride in their work, but restrictions on profits and wages only killed initiative, and resulted in the frustration, absenteeism, and discontent prevalent today. The importance was emphasised of the Thomas W. Ward activities in overseas trade, and in particular the potentialities of India, South Africa, Australia, and the Near East. Their interests of the firm in the cement industry were satisfactory; nationalisation of cement

would not benefit workers, management, or the State. The report and accounts were adopted.

Western Region Line near Chippenham Closed by Subsidence.—The up line between Chippenham and Dauntsey was closed late on the night of December 22 after a subsidence of the embankment near Christian Malford Halt. Shortly after an up express had passed, a ganger found the metals suspended over a gap of about 40 ft. The down line was not affected. Up trains were diverted via Badminton and via Devizes until the resumption of normal working on the morning of December 24.

Addition to B.S.A. Tools Group.—The firm of Leo. C. Steinle Limited, for many years agents for a number of Continental machine tool makers, including the Index-Werke, Esslingen, and manufacturers of the Steinle thread generating machines and Huller tapping machines, has entered into an arrangement with B.S.A. Tools Limited under which B.S.A. Tools acquires the goodwill, buildings, plant, etc., of Leo. C. Steinle Limited at 93, Albert Embankment, London, S.E.11, for the purpose of developing it as the Southern headquarters of the B.S.A. Tools group of companies. Two years ago B.S.A. Tools acquired the whole of the plant of the Index-Werke at Esslingen.

Pantomime Excursions to London.—During the pantomime season the Southern Region is running special excursions from South Coast resorts for visits to London pantomimes. Between January 2 and 9 excursions have been arranged from Brighton, Worthing, Shoreham-by-Sea, Portsmouth, Salisbury, Yeovil, Hastings, Bexhill, and Eastbourne, to see "Little Miss Muffet" at the Casino Theatre, and on January 18, from Bournemouth, Poole, and Southampton, to see "Dick Whittington" at the Princes Theatre and "Cinderella on Ice" at the Empress Hall. In each case the all-in fare of about 30s. includes a seat for the show, rail journey, tea, and supper on the train, a coach tour of the West End of London and drive to and from the theatre.

Message to Road Haulage Staff.—In a Christmas and New Year message to the staff of British Road Services, Major-General G. N. Russell, Chairman, Road Haulage Executive, has said that during 1949 considerable progress was made in establishing the organisation and it was now possible to get a glimpse of British Road Services as it would be when the process of acquisition and the consolidation of the Group organisation was complete. Its expansion could be illustrated by the fact that the message would be going to more than 60,000 persons, whereas last year the organisation was only 23,000 strong. There

was still a long way to go, however, before the conception of a nation-wide network of road haulage services materialised. The machinery for joint consultation that was shortly coming into operation would give everyone, from top to bottom of the organisation, an opportunity to play his or her full part in the great venture in which they were occupied.

Canadian National Railways Income Deficit.—The Canadian National Railways this year established a new high record for gross revenues, estimated at \$499,000,000, but the operating surplus of approximately \$19,000,000 is the lowest since 1948. After provision for interest on securities held by the public and owing to Government taxes and other charges, the year is ending with an income deficit estimated at \$45,000,000.

Paraguay Central Railway.—The moratoria which were agreed to by the prior lien and "A" debenture stockholders in December, 1946, in respect of the postponement of the payment of interest on their stocks, expire on January 14, 1950. Meetings of the holders was held on December 29 when it was proposed that the moratoria be renewed for a further year to January 14, 1951, with power to the committee representing such stockholders to extend the period for a further two years.

Forthcoming Meetings

- December 30 (Fri.).—Institution of Civil Engineers, Great George Street, London, S.W.1, at 3 p.m. Christmas lectures for boys: "The Wonders of Big Bridges," by Mr. H. Shirley Smith.
- January 2 (Mon.).—Institution of Civil Engineers, Great George Street, London, S.W.1, at 3 p.m. Christmas lectures for boys: "The Building of Dams," by Mr. C. W. Knight.
- January 2 (Mon.).—Institute of Transport, Metropolitan Section, at Livingstone House, Broadway, London, S.W.1, at 5.30 for 6 p.m. "Transport 1900-1950," by Mr. C. E. R. Sherrington, Secretary, Railway Research Service.
- January 5 (Thu.).—British Railways, Western Region, London Lecture & Debating Society, in the Clerks' Dining Club, Bishop's Bridge Road, Paddington, at 5.45 p.m. "Claims and their Prevention," by Mr. H. W. Howard.
- January 6 (Fri.).—Institution of Mechanical Engineers, Storey's Gate, St. James's Park, London, S.W.1, at 5.30 p.m. Extra General Meeting: Industrial Administration and Engineering Production Group. "The Lost Wax Process of Precision Casting," by Mr. J. S. Turnbull.
- January 6 (Fri.).—Institution of Railway Signal Engineers, at the London Transport Executive Signal School, Earls Court Station, London, S.W.5, at 6.15 p.m. "Signalling Power Supplies," by Mr. D. L. Mitchell.
- January 6 (Fri.).—Railway Club, 57, Fetter Lane, London, E.C.4, at 7 p.m. "Railway Developments in South-East London," by Mr. C. F. Wells.
- January 6 (Fri.).—Scottish Society of Students of the Locomotive, at the Boardroom, Scottish Regional Headquarters, 302, Buchanan Street, Glasgow, at 7.30 p.m. "The Development of the Diesel Locomotive, with some Scottish Applications," by Mr. Leonard Ingall.

Railway Stock Market

Stock markets are closing the year firmly despite seasonal contraction in business and the F.B.I. statement that economic conditions demand restraint in dividend payments. British Funds have been helped by the success of the £3 million Agricultural Mortgage debenture issue and by the premium established by these new 3½ per cent. debentures in initial dealings. The proposed cut in oil imports from U.S.A. and reports of impending tobacco cuts have emphasised the dollar shortage and also the need to increase exports to the U.S.A. and to Canada. Nevertheless, the statement pending on Britain's gold and dollar reserves at the end of 1949 may show some improvement; but unless dollar exports expand rapidly, there may be an austerity budget in April. Meanwhile there is market talk of a good uptrend in industrial shares, in the hope of a change of Government at the General Election. The outlook for markets for the time being may be determined by the trend in British Funds, which depend much on whether the Government broker is still prepared to maintain current levels of gilt-edged stocks.

A feature of foreign rail stocks during 1949 has been activity on take-over developments and estimates; but there is always a long wait before take-over agreements are ratified and the pay-out money received. The San Paulo final claims seem far from settlement; meanwhile, the 10s. units are quoted at 15s. 6d., which compares with highest and lowest levels of 24s. and 12s. 9d. recorded in 1949. During the year Leopoldina ordinary moved between 12 and 7½; they are now 8½. The preference (1949 extremes 38½ and 24) are now 25½, the 4 per cent. debentures (extremes 97½ and 77½) 85, while the 6½ per cent. debentures, now at 124, have been up to 142½ and down to 96. Leopoldina Terminal 5 per cent. debentures have had extremes of 116 and 66½ and are now 95. Great Western of Brazil, currently at 128s. 9d., were at 100s. earlier in the year, but later rose to 143s. 9d. when the take-over agreement was announced.

Manila "A" debentures (now at 77) have had highest and lowest levels of 95

and 80½ during the year. Canadian Pacifics at 28½ are now at their highest for 1949. Antofagasta (extremes 10 and 5½) are 7½ and the preference stock (extremes 60 and 38½) 49. The recent revival of take-over talks has brought La Guaira, and also Bolivar stocks, up to their highest levels recorded during the year. The current price for La Guaira is 50½; earlier in the year they were only 11; 5 per cent. debentures are 84, comparing with 47½ earlier in the year. Bolivar "A" debentures were only 42 earlier this year and are now 74; while the "C" debentures now at 47 were no better than 10 at one time in 1949. United of Havana stocks are closing the year not much below best levels in 1949. The 1906 debentures, for instance, are now 25½; highest and lowest have been 29½ and 8.

Road transport and bus companies' shares have declined sharply since earlier in the year when there were reports of more acquisitions by British Transport. Later it became known that the question of further acquisition was being held over until after the General Election. South-down, which earlier in 1949 were up to 8½, have since been down to 5½, but are now 6½. West Riding Automobile's highest in 1949 was 85s. 6d. and the current level is 68s.

British Transport stocks have moved with British Funds, which throughout 1949 were receding in price, culminating in sharp declines in November before the intervention of the Government broker, which resulted in a rally that has since been fairly well maintained. War Loan 3½ per cent. has had extremes of 104½ and 87½, comparing with the current price of 92½. Transport 3 per cent. (1978-88) is now 90, but earlier in 1949 was up to 102½ and down to 84½.

Locomotive builders' shares have fluctuated with industrials. Vulcan Foundry are now 18s. 6d., compared with 1949 highest and lowest levels of 27s. 3d. and 16s. 6d. Extremes for Beyer Peacock were 24s. 4½d. and 17s. 6d., and they are currently at 19s. 6d. North British Locomotive have been 25s. and 17s. 3d. and the current price is 19s. 7½d. Wagon Repairs touched 21s. 10½d. and are now 17s.

Traffic Table of Overseas and Foreign Railways

Railways	Miles open	Week ended	Traffics for week		No. of week	Aggregate traffics to date		
			Total this year	Inc. or dec. compared with 1947/48		Total	Increase or decrease	
						1948/49		
South & Central America	Antofagasta...	811	18.12.49	£ 75,970 +	£ 3,290	50	£ 3,395,080 +	£ 567,420
	Costa Rica ...	281	Sept., 1949	30,929 -	3,154	13	102,621 -	8,998
	Dorada ...	70	Oct., 1949	31,848 -	908	43	296,878 -	23,637
	Inter. Ctl. Amer. ...	794	Oct., 1949	\$579,232 -	\$376,578	43	\$10,110,125 -	\$960,633
	La Guaira ...	22½	Nov., 1949	\$108,378 -	\$1,458	48	\$1,167,360 +	\$9,007
	Nitrate ...	382	15.12.49	19,983 +	5,619	50	443,971 +	143,897
	Paraguay Cent. ...	274	16.12.49	\$143,353 +	\$34,397	24	\$3,462,207 +	796,384
	Peru Corp. ...	1,050	Nov., 1949	\$6,493,300 -	\$2,623,001	22	\$27,009,758 +	\$8,615,128
	" (Bolivian Section)	66	Nov., 1949	Bs.11,211,000 +	Bs.1,920,270	22	Bs.52,157,164 +	Bs.8,295,289
	Salvador ...	100	Aug., 1949	c81,000 +	c1,000	9	c173,000 +	c8,000
Taltal ...	154	Nov., 1949	15,910 +	9,120	22	60,980 +	22,460	
United of Havana ...	1,301	11.6.49	\$231,311 +	\$14,746	49	\$13,733,928 -	\$4,659,951	
Canada	Canadian National†	23,473	Nov., 1949	14,853,000 -	84,000	48	151,818,000 +	3,068,000
	Canadian Pacific†	17,037	Oct. 1949	11,084,000 -	400,000	43	100,323,000 +	3,643,000
Various	Barsi Light* ...	167	Nov., 1949	32,257 -	9,202	35	388,605 +	15,450
	Egyptian Delta ...	607	31.10.49	21,874 -	5,055	31	385,264 -	12,682
	Gold Coast ...	536	Oct., 1949	217,578 -	497	32	1,625,728 +	213,529
	Mid. of W. Australia	277	Oct., 1949	28,391 -	3,076	18	109,866 -	3,847
	Nigeria ...	1,900	Sept., 1949	485,713 +	73,445	25	2,703,823 +	86,332
	South Africa ...	13,347	26.11.49	1,489,097 +	62,984	34	51,017,453 +	4,907,536
	Victoria ...	4,744	Sept., 1949	1,625,367 +	202,174	13	—	

* Receipts are calculated @ 1s. 6d. to the rupee

† Calculated at \$3 to £1

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